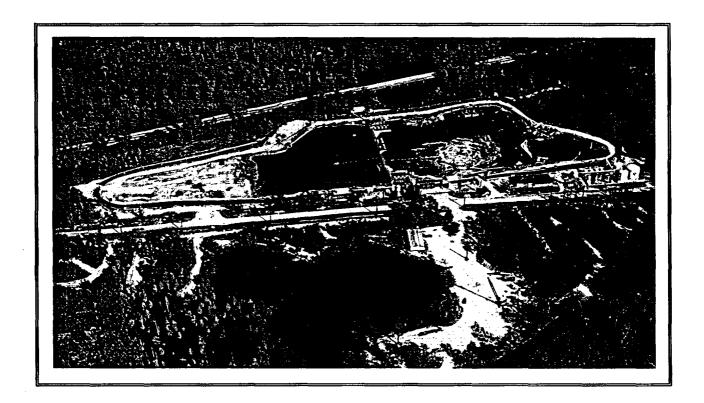


FLTG, Inc. Crosby, Texas

MONTHLY PROGRESS REPORT



Submitted to:

U.S. Environmental Protection Agency - Region 6 and Texas Natural Resource Conservation Commission

March, 1995

01502304



FLTG, Inc.

Crosby, Texas

MONTHLY PROGRESS REPORT

Submitted to:

U.S. Environmental Protection Agency - Region 6 and Texas Natural Resource Conservation Commission

March, 1995

French Ltd. Project

FLTG, Incorporated

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8A Repository Status Report: March, 1995

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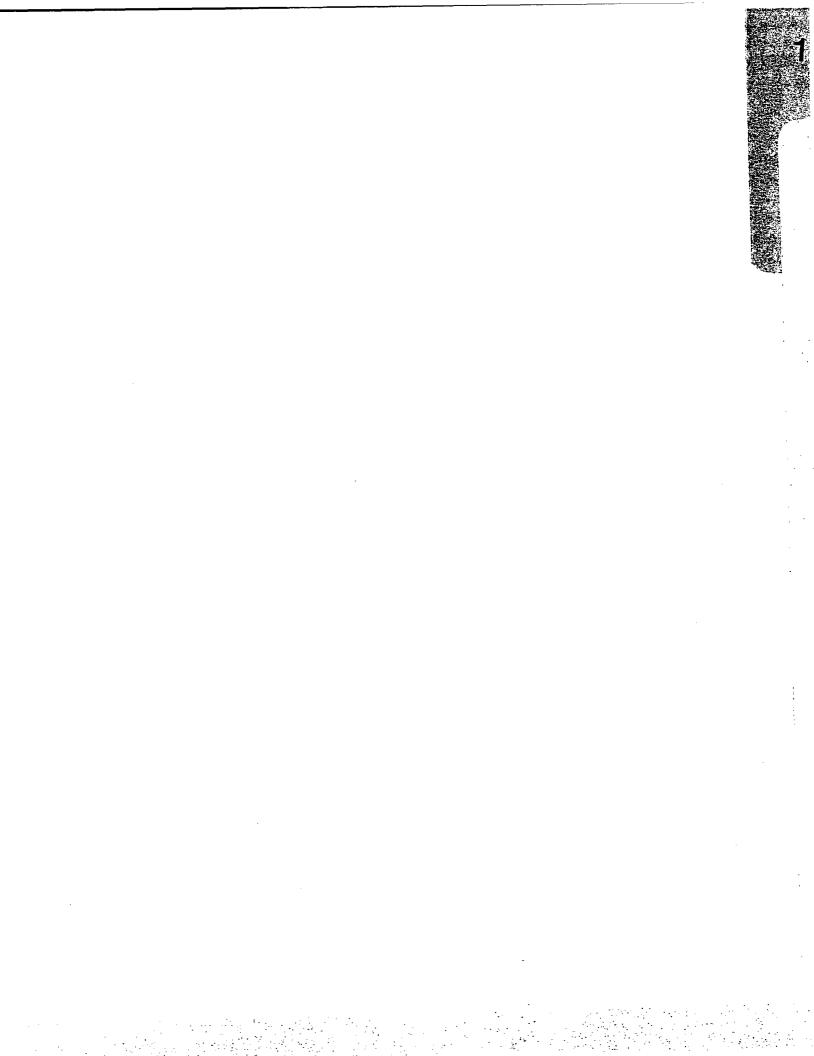
Appendix A - None

Appendix B - None

Appendix C - Analytical Results -

Samples Dated March, 1995

Project I.D.	Date Received	Project I.D.	Date Received
M03A0308	03/01/95	M04C0018	03/19/95
S14K0012	03/01/95	M03A0313	03/20/95
M01D0052	03/03/95	M03A0315	03/20/95
M03A0309	03/03/95	M04A0028	03/20/95
S14L0024	03/03/95	S14K0015	03/20/95
S14L0025	03/03/95	S14L0026	03/20/95
S16K0004	03/07/95	S16A0008	03/20/95
M03A0310	03/08/95	M04B0026	03/21/95
M03A0311	03/09/95	M06C0025	03/21/95
S14C0007	03/10/95	S14A0092	03/21/95
S14K0013	03/15/95	M03A0314	03/22/95
M03A0312	03/16/95	M01D0054	03/28/95
S14K0014	03/16/95	M03A0316	03/28/95



FLTG, Incorporated

1.0 INTRODUCTION

This report covers the activities of FLTG, Inc. and the French Limited Project for March, 1995. FLTG, Inc. manages the project for the French Limited Task Group of Potentially Responsible Parties.

During March, 1995, the project team focused on the following activities and issues:

- Health, Safety, and Quality.
- Safety awareness.
- Contractor safety.
- HAZOP of daily work assignments.
- Detecting and correcting work place hazards.
- Response to changing site conditions.
- Injection of Cell D water.
- Maintain DO, OUR, HMB, and plate count in Cell D.
- Vegetation evaluation in Cell E.
- Operation and maintenance of the aquifer remediation system.
- In-situ aquifer bioremediation.
- Lease property south of Gulf Pump Road.
- Water treatment plant operation and maintenance.
- Operation of the data base management system.

MONTHLY PROGRESS REPORT Introduction

French Ltd. Project

FLTG, Incorporated

- Wetlands project construction.
- This report includes:
 - A summary of March activities, issues, and progress.
 - Lagoon area re-vegetation.
 - Groundwater and Subsoil Remediation activities, issues, and progress.
 - Groundwater Treatment Plant activities and issues.
 - Ambient Air Management status.
 - QA/QC status and data.
 - Site management activities and issues.
 - Wetlands restoration activities, issues, and progress.



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2.0 SUMMARY

2.1 Summary of Activities and Progress

2.1.1 Health and Safety

There were no personal injury incidents.

There were no equipment damage incidents.

A security guard was removed from the project for repeatedly sleeping on the job.

All site workers earned the March safety bonus.

Conducted safety meetings and job inspections at the start of each shift; reviewed safety issues before starting all jobs.

All employees and contractors attended daily safety meetings.

Conducted daily mini-HAZOP of all specific jobs.

Supervision made 196 specific on-the-job safety contacts.

Emphasized wet, slippery conditions.

Inspected and certified all fire extinguishers.

Emphasized the hazards and precautions associated with working around moving equipment.

Conducted 22 specific health and safety inspections.

Logged all safety issues each shift; less than 24-hour response to all safety issues.

The daily raffle ticket safety awareness program has been effective in maintaining daily safety awareness among all site personnel and contractors.

Conducted personnel exposure monitoring, and all results were within acceptable levels. The most recent results are in Table 2-1.

2.1.2 Quality/QAQC/Data Base Management

The total quality process was used. The status of the goals is shown on Table 2-2.

Raw data is being validated as per the plan.

The data base management system operated with no problems or delays.

There were no data or reports rejected due to errors.

American Analytical continued to provide data on time.

2.1.3 Lagoon

Maintained a high level of biological activity in Cell D; OUR and HMB were high. Added O₂ to Cell D using a downdraft aerator for five days.

Continued subsurface injection of Cell D water in Cell E and Cell F; there were no problems or issues, and adequate gradient control was maintained.

Continued evaluation of various tree and bush species for passive dewatering of the subsurface inside the floodwall.

Tested floodwall gate closure.

2.1.4 Ambient Air Management

Ambient air quality was manually checked daily with portable analyzers, and no response action was required.

Air quality was continuously monitored in all potential exposure areas and on all special jobs.

Time-integrated samples were collected in three work areas, and the results indicated no exposure; the data is shown in Table 2-1.

2.1.5 Aquifer Remediation

Monitored status of DNAPL plumes.

Continued routine S1 and INT oxygen and nutrient injection.

Continued to evaluate ways to increase INT remediation rates.

Flows continued to increase in the sand fracture areas.

Operated vacuum-enhanced pumping systems for INT wells.

Issued weekly well status and performance reports.

Inspected and adjusted all wells each day.

Continued daily maintenance of recovery and injection wells.

Completed monthly well measurements and sampling; TOC levels continue to decrease.

Maintained O₂ content of injection water at about 40-45 ppm.

Shut off 73 production or injection wells in areas that have reached aquifer remediation shut-off criteria; monthly sampling indicated no rebound.

Submitted a refinement notice to clarify the aquifer remediation criteria.

2.1.6 Groundwater Treatment

The treated water did not require carbon treatment to maintain effluent criteria.

There was no downtime.

The water treatment plant effluent data is shown in Table 2-3. All effluent samples met criteria.

TOC input to T-101 continued to decrease.

The process operators collected all the process water and ground water samples.

2.1.7 Wetlands Restoration

Dewatering was required after every rainfall.

Continued topsoil replacement in selected areas.

Continued excavation of flow channels; frequent wet weather delayed progress on site excavation.

Started construction of the bridges.

Reviewed status, progress, and issues with the TNRCC.

Conducted a site tour for the Houston Geological Society.

2.1.8 Site Management and Issues

Used the on-site laboratory to process all the operational control samples.

Reviewed site progress and issues in detail with EPA and TNRCC on a regular basis.

Validated all analytical data as per the QAQC plan.

Reviewed project status and issues each day to ensure focus on critical issues - safety, quality, cost, INT zone progress.

Issued weekly cost, schedule, and maintenance reports.

Reviewed progress on issues and action plans each week.

Reduced aquifer remediation operational and maintenance requirements.

Reduced technical support MH's.

MONTHLY PROGRESS REPORT Summary

French Ltd. Project

FLTG, Incorporated

Evaluated site security requirements.

Developed project manpower reduction plan.

TABLE 2-1

Ambient Air Management Time Integrated Exposure Data

PEL Moltpoofs401 8-Mar-95 Sample Trailer Security		PEL		2				
Compound PPM % of PEL PPM % of PEL PPM % of PEL PPM PPM % of PEL PPM PPM % of PEL PPM % of PEL PPM PP								
Chloromethane 50 0.001 0.000 0.001 0.001 0.002 0.001 0.000	Compound							(
Bromomethane	- Composing	7 7 101	70 OI FEL	FFIVI	76 OI FEL	FFW	% OT PEL	PPM
Bromomethane	Chloromethane	50	0.001	0.000	0.001	0.001	0.002	0.004
Vinyl chloride 1 0.000								
Chloroethane 1000 0.000	Vinyl chloride	_						
Dichloromethane 50 0.002 0.001 0.005 0.003 0.010 0.005 Acetone 750 0.001 0.004 0.001 0.005 0.001 0.005 Carbon disulfide 10 0.000 0.000 0.000 0.000 0.000 0.000 1,1-Dichloroethene 5 0.000	•	•						
Acetone 750 0.001 0.004 0.001 0.005 0.001 0.005 0.001 0.005 0.000 0.00			1 0.000	0.000	0.000	0.000	0.000	0.000
Acetone 750 0.001 0.004 0.001 0.005 0.001 0.005 0.001 0.005 0.000 0.00	Dichloromethane	50	0.002	0.001	0.005	0.003	0.010	0.005
Carbon disulfide 10 0.000								
1,1-Dichloroethene	Carbon disulfide							
1,1-Dichloroethane 100 0.000 0	1.1-Dichloroethene						1	
trans-1,2-Dichloroethe 200 0.000 0.001 0.002 0.004 0.004 0.008 Chloroform 10 0.018 0.002 0.003 0.000 0.005 0.001 1,2-Dichloroethane 10 0.002 0.000 0.000 0.000 0.000 0.000 2-Butanone 200 0.000 0.000 0.000 0.000 0.000 0.000 0.000 1,1,1-Trichloroethane 350 0.000 0.000 0.000 0.000 0.000 0.000 0.000 Vinyl acetate 10 0.000		_						
Chloroform 10 0.018 0.002 0.003 0.000 0.005 0.001 1,2-Dichloroethane 10 0.002 0.000	•							
1,2-Dichloroethane 10 0.002 0.000								
2-Butanone 200 0.000	1.2-Dichloroethane	_	1 1					
1,1,1-Trichloroethane 350 0.000 <td>2-Butanone</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	2-Butanone							
Carbon Tetrachloride 5 0.000]	0.000	0.555	5.551	1 0.000	0.000
Carbon Tetrachloride 5 0.000	1,1,1-Trichloroethane	350	0.000	0.000	0.000	0.000	0.000	0.000
Vinyl acetate 10 0.000	Carbon Tetrachloride	5	1					
Description of the late Description of t	Vinyl acetate	10	1					
1,2-Dichloropropane 75 0.000	Bromodichloromethane				0.000		1 0.000	
cis-1,3-Dichloropropen 1 0.000 <td>1,2-Dichloropropane</td> <td>75</td> <td>0.000</td> <td></td> <td>0.000</td> <td></td> <td>0.000</td> <td></td>	1,2-Dichloropropane	75	0.000		0.000		0.000	
Trichloroethene 50 0.000	cis-1,3-Dichloropropen	1	0.000			*.**		
Dibromochloromethane 0.000	Trichloroethene	50						
1,1,2-Trichloroethane 10 0.000 <td>Dibromochloromethane</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td> ""</td> <td></td>	Dibromochloromethane						""	
Benzene 1	1,1,2-Trichlorgethane	10	0.000		0.000		0.000	
trans-1,3-Dichloroprop 1 0.000 <td>Benzene</td> <td>1</td> <td>0.000</td> <td>0.000</td> <td></td> <td></td> <td></td> <td></td>	Benzene	1	0.000	0.000				
2-Chloroethylvinyl ether 0.000 0.000 0.000 0.000 Bromoform 0.5 0.000 0.000 0.000 0.000 0.000 0.000 4-Methyl-2-pentanone 50 0.000 0.000 0.000 0.000 0.000 0.000 0.000 2-Hexanone 5 0.000 0.000 0.000 0.000 0.000 0.000 0.000 Tetrachloroethene 50 0.000 0.000 0.000 0.000 0.000 0.000 0.000 1,1,2,2-Tetrachloroet 1 0.000 0.000 0.001 0.001 0.000 0.000 Toluene 100 0.000 0.000 0.001 0.001 0.000 0.000	trans-1,3-Dichloroprop	1	0.000	0.000	0.000			
4-Methyl-2-pentanone 50 0.000	2-Chloroethylvinyl ether	•	1	0.000		0.000		
4-Methyl-2-pentanone 50 0.000							1	
2-Hexanone 5 0.000 <t< td=""><td>Bromoform</td><td>0.5</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td></t<>	Bromoform	0.5	0.000	0.000	0.000	0.000	0.000	0.000
2-Hexanone 5 0.000 <t< td=""><td>4-Methyl-2-pentanone</td><td>50</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td>0.000</td><td></td></t<>	4-Methyl-2-pentanone	50	0.000	0.000	0.000	0.000	0.000	
1,1,2,2-Tetrachloroet 1 0.000	2-Hexanone	5	0.000	0.000	0.000	0.000	0.000	
Toluene 100 0.000 0.000 0.001 0.001 0.000 0.000	Tetrachloroethene	50	0.000	0.000	0.000	0.000	0.000	0.000
Toluene 100 0.000 0.000 0.001 0.001 0.000 0.000	1,1,2,2-Tetrachloroet	1	0.000	0.000	0.000	0.000	0.000	0.000
	Toluene	100	0.000	0.000	0.001	0.001	0.000	
	Chlorobenzene	10	0.000	0.000	0.000			
Ethylbenzene 100 0.000 0.000 0.000 0.000 0.000 0.000	Ethylbenzene	100						
Styrene 50 0.000 0.000 0.000 0.000 0.000	Styrene	50	0.000]	
Xylene (total) 100 0.000 0.000 0.000 0.000 0.000 0.000	Xylene (total)	100	0.000	0.000	0.000			
Hexane 0.002 0.002 0.003	Hexane		[0.002	ļ i			

FLTG, Incorporated

TABLE 2-2

Project Quality

Status as of											
03/31/95		<u>Goals</u>									
Yes	1)	No OSHA recordable injuries.									
Attention	2)	100% compliance with all safety	rules and procedures.								
Yes	3)	No citations for violations of applicable, relevant and appropriate regulations.									
Yes	4)	100% attendance (including subcontractors) at daily safety meetings.									
Attention	5)	Less than 24-hour response time	on health and safety issues.								
Yes	6)	100% sign-in and security clearar	nce.								
Yes	7)	No invalidation of reported data d	ue to QA/QC issues.								
	8)	Spend less than:									
			MH/Month								
Yes	• Di	rect hire	3,000								
Yes	• FL	.TG management	700								
Yes/Attention	• Te	echnical support (3 people)	600								
Yes	• Ma	aintenance support	120								
Yes	9)	Pump at least 90 gpm; inject at le	east 60 apm.								
Yes	10)	Remediate shallow alluvial zone a									
Yes	11)	Hold analytical cost to less than sonly).	•								
Yes	12)	No unscheduled overtime (per day	y or per week).								
Yes	13)	· · · · · · · · · · · · · · · · · · ·									
Yes	14)	Documented training of site personnel for all work assignments.									
Yes	15) Weekly audit of actual performance versus goals.										

TABLE 2-3 Treated Water Results Summary

		pH		T:	ss	T	oc	0	l G	Ben	zene	Chlo	r HC's		I PCBs	Napti	
Collected	Set No.	(6-9)		5 PPM		55	55 PPM		PPM	150	PPB	500 PPB		0.65 PPB		300 PPB	
	******	Daily	R-Ava	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Deity	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg
1-Dec-94	M03A0287	7.4	1	1.		34.8		2.5		6.		526.		.16		5.	
5-Dec-94	M03A0288	7.57	- 1	1.	- 1	28.5		2.5		6.		305.		.15		5.	
8-Dec-94	M03A0289	7.52		1.		40.6		2.5		6.		480.		.16		5.	
12 Dec-94	M03A0290	7.43		4.		33.		2.5		6.		342.		.16		5.	
15-Dec-94	M03A0291	8.13		.5	1	23.		2.5		6.		145.		.16		5.	
19-Dec-94	M03A0292	7.96	ì	1.	1	29.3		2.5		2.5		75.		.16		5.	
22-Dec-94	M03A0293	7.91		4.		17.8		2.5		2.5		170.		.16		5 .	
26-Dec-94	M03A0294	7.68		10.	1	41.8		2.5		6.		353.		.16		5.	
29-Dec-94	M03A0295	7.79	7.7	1.	2.6	15.4	29.4	2.5	2.5	2.5	4.8	205.	289	.16	.16	5.	5.
2-Jan-95	M03A0296	7.78	7.8	4.	2.9	12.9	26.9	2.5	2.5	5.	4.7	275.	261	.16	.16	5 .	5.
5-Jan-95	M03A0297	7.81	7.8	5.	3.4	19.	25.9	2.5	2.5	6.	4.7	249.	255	.16	.16	5.	5.
9-Jan-95	M03A0298	7.8	7.8	7.	4.1	9.8	22.4	2.5	2.5	2.5	4.3	124.	215	.16	.16	5.	5.
12-Jan-95	M03A0299	7.77	7.8	2.	3.8	9.8	19.9	2.5	2.5	2.5	3.9	200,	200	.16	.16	5.	5.
16-Jan-95	M03A0300	7.61	7.8	4.	4.2	18.3	19.3	2.5	2.5	6.	3.9	393.	227	.16	.16	5 .	5.
19-Jan-95	M03A0301	7.44	7.7	2.	4.3	19.8	18.3	2.5	2.5	5.	4.2	454,	269	.16	.16	5.	5.
23-Jan-95	M03A0302	7.82	7.7	9.	4.9	35.5	20.3	2.5	2.5	6.	4.6	192.	272	.16	.16	5.	5. 5
26 Jan-95	M03A0303	7.66	7.7	.5	3.8	20.5	17.9	2.5	2.5	6.	4.6	234.	258	.16	.16	5. 5.	5. 5.
30-Jan-95	M03A0304	7.15	7.6	4,	4.2	44.3	21.1	2.5	2.5	25.	7.1	2326.	494	.16	.16 .16	5. 5.	5. 5.
2-Feb-95	M03A0305	7.28	7.6	.5	3.8	11.7	21.	2.5	2.5	6.	7.2	613.	532	.16 .16	.16	5. 5.	5. 5.
6 Feb-95	M03A0306	7.55	7.6	1.	3.3	11.7	20.2	2.5	2.5	5 .	7.1	411.	550	.16	.16	5. 5.	5. 5.
9-Feb-95	M03A0307	7.52	7.5	5.	3.1	8.8	20.	2.5	2.5	5.	7.4 7.7	226.	561 578	.16	.16	5. 5.	5. 5.
13-Feb-95	M03A0308	7.5	7.5	22.	5.3	9.7	20.	2.5	2.5	5.	7.7 7.6	349.	565	.16	.16	5. 5.	5.
16-Feb-95	M03A0309	7.33	7.5	.5	4.9	5.2	18.6	2.5	2.5	5.	7.6 7.4	276. 193.	505 536	.16	.16	5. 5.	5.
20-Feb-95	M03A0310	7.37	7.5	6.	5.4	5.8	17.	2.5 2.5	2.5 2.5	4. 2.5	7.1	60.	521	.16	.16	5.	5.
23 Feb-95	M03A0311	7.29	7.4		4.5	1.	13.2	2.5	2.5	2.5	6.7	164.	513	.16	.16	5.	5.
27 Feb 95	M03A0312	7.46	7.4	3.	4.8	9.5	12. 8.	2.5	2.5	2.5	4.2	145.	271	.16	.16	5.	5.
2-Mer-95	M03A0313	7.47	7.4	.5	4.4	8.5 8.1	7.6	2.5	2.5	2.5	3.8	128.	217	.16	.16	5.	5.
6-Mer-95	M03A0314	7.49	7.4	1.	4.4	8.1 8.	7.2	2.5	2.5	2.5	3.5	193.	193	.16	.16	5.	5.
9-Mer-95	M03A0316	7.38	7.4	1.	4.4	7.2	7.2	2.5	2.5	2.5	3.22	111.	180	.16	.16	5.	5.
13-Mar-95	M03A0316	7.64	7.4	5.	2.1		6.6	2.5	2.5	2.5	2.9	150.	158	.16	.16	5.	5.
16-Mer-95	M03A0317	7.55	7.4	.5		6.	6.7	2.5	2.5	2.5	2.7	97.	138	.16	.16	5.	5.
20-Mar-95	M03A0318	7.41	7.5	.5	2.1	6.6	6.8	2.5	2.5	2.5	2.5	185.	137.	.16	.16	5.	5.
23-Mar-95	M03A0319	7.45	7.5	1.	1.5	6.	8.	2.5	2.5	6.	2.89	325.	166	.16	.16	5.	5.
27-Mar-95	M03A0320	7.83	7.5	3.	1.7	12.2	<u> </u>	2.5	2.5	0.	2.03	, 323.	100			<u>=:</u>	 _
30-Mar-95	M03A0321	7.47	7.5														
3-Apr-95	M03A0322	7.42	7.5														

Discharge sample of 17-Oct destroyed in flood.

Chlorinated hydrocarbone value is sum of detected concentrations of 21 volatile chlorinated hydrocarbons on target compound list.

TABLE 2-3 (Continued)
Treated Water Results Summary

	1			8			:d		Cr I				ъ	- A	An	Hg		NI		S.		Ag		Zn	
0.0	Set No.		PPB	200		_	PPB	500			PPB		PPB		PPB	1 PPB		148 PPB		20 PPB		5 PPB		162 PP8	
Collected	Set No.		R-Ava	Daily			R-Avg				R-Avg		R-Ava		R-Avg	Daily	R-Ava	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg
1-Dec-94	M03A0287	11.	N-VAA	109.	11-114	.1	11 // 48	.5	*****	1.		.5		7.		.1		10.		1.3		.5		4.	
5-Dec-94	M03A0286	12.		121.		i		1.		3.		1.		19.		.1		.9		1.3		.5		9.	l
8-Dec-94	M03A0289	14.		128.		.1		1.		.3		.5		3.		.1		10.		1.3		.2		3.8	
12-Dec-94	M03A0290	7.		154.		.1		7.		4.		.5		9.		.1		13.		1.3		.2		5.	l
15-Dec-94	M03A0291	49.		92.		.1		2.	- 1	.7		.5		3.		1		1.		5.		.2	- 1	5.	1
19-Dec-94	M03A0292	16.		93.		.1		1.		1.		.5		3.		.1		2.		1.		.2	- 1	4.	ĺ
22-Dec-94	M03A0293	17.		130.		.1		.2		1.4		.5		2.		.1		2.		1.3		.2		1.5	İ
26-Dec-94	M03A0294	11.	'	151.		.1		.2		1.8		.5		9.		.1		4.		1.3		.2		6.	1
29-Dec-95	M03A0295	18.	17.2	114.	121	.2	.1	1.	1.5	1.	1.6	.5	.6	4.	6.6	.1	.1	3.	5.1	5.	2.1	.2	.2	4.	4.7
2-Jan-95	M03A0296	9.9	17.1	172.	128	.1	.1	2.1	1.7	1.6	1.6	.5	.6	18.	7.8	-1	.1	1.	4.1	1.2	2.	.2	.2	7.	5.
5-Jan-95	M03A0297	14.	17.3	151.	132	.1	.1	3.	1.9	2.	1.5	.5	.5	57.	12.	.1	-1	6.	4.7	1.2	2.	.2	.2	20.	6.3
9-Jan-95	M03A0298	12.	17.1	171.	136	.1	.1	.9	1.9	3.	1.8	.5	.5	23.	14.2	1 .1	-1	4.	4.	1.3	2.	.2	.2	7.	6.6
12-Jan-95	M03A0299	16.	18.1	143.	135	.1	.1	.2	1.2	2.	1.6	.5	.5	2.	13.4	[-!	.1	2.	2.8	1.3	2.	.2	.2	3.	6.4
16-Jan-95	M03A0300	12.	14.	146.	141] .1	.1	.6	1.	3.	1.9	.5	.5	1.	13.2	.1	.1	3.	3,	1.3	1.6	.2	.2	6.	6.5
19-Jan-95	M03A0301	18.	14.2	135.	146	.1	.1	.4	.9	2.	2.	.5	.5	2.	13.1	-1	.1	4.	3.2	1.3	1.7	.2	.2	18.	8.1 9.7
23-Jan-95	M03A0302	12.	13.7	140.	147	.1	.1	.2	.9	2.	2.	.5	.5	3.	13.2	-!	1	6.	3.7	1.3	1.7	.2	.2	16.	10.3
26-Jan-95	M03A0303	16.	14.2	148.	147	.1	.1	.2	.9	2.	2.1	.5	.5	2.	12.4	':	.1	2.	3.4	1.3	1.7	.2	.2	12. 5.	10.4
30-Jan-95	M03A0304	9.	13.2	238.	160	.1	.1	.2	.8	2.	2.2	.5	.5	43.	16.8	1 ''	.1	3.	3.4	1.3	1.2		.2	8.	10.6
2-Feb-95	M03A0305	10.	13.2	192.	163	1.	.1	1.	.7	2.	2.2	.5	.5	15.	16.4	1 :	- 1	4.	3.8	1.3	1.2	.2 .2	.2	5.	8.9
6-Feb-95	M03A0306	11.	12.9	188.	167	.1	.1	.2	.4	1.	2.1	.5	.5	4.	10.6	l :	-1	2.	3.3	1.3	1.3	.2	.2	3. 11.	9.3
9-Feb-95	M03A0307	16.	13.3	195.	169	.1	.1	.2	.3	4.	2.2	.5	.5	6.	8.7	':	-1	6. 5.	3.6 3.9	1.3 1.3	1.3	.2	.2	8.	9.9
13·Feb·95	M03A0308	13.	13.	184.	174	.1	.1	2.	.5	1.	2.1	.5	.5	15.	10.1	':	.1				1.3	.2	.2	7.	10.
16-Feb-95	M03A0309	12.	13.	184.	178] .1	.1	.2	.5	1.	1.9	.5	.5	6.	10.7	'¦	.1	6. 8.	4.2 4.7	1.3	1.3	.3	.2	6.	8.7
20-Feb-95	M03A0310	14.	12.6	191.	184	.1	.1	2.	.7	2.	1.9	.5	.5	27.	13.4	l '¦	.1 .1	8.	4.9	1.3	1.3	.2	.2	9.	7.9
23 Feb 95	M03A0311	13.	12.7	165.	187	1-1-		1.	.8	2.	1.9	.5	.5	3.	13.4	 	.1	12.	6.	1.3	1.3	.5	-:2	2.5	6.8
27-Feb-95	M03A0312	22.	13.3	144.	187	.1	.1	4,5	1.2	3.	2.	.5	. 5 .5	3. 15.	10.4		.1	8.	6.6	1,3	1.3	.5	.2	6,	6.9
2-Mar-95	M03A0313	23.	14.9	133.	175	1.1	.1	2.	1.4	1.	1.9	.5	.5 .7	3.	9.1		.1	2.5	6.4	.5	1.2	.8	.3	8.	6.9
6-Mar-95	M03A0314	17.	15.7	130.	168	1.	.2	1.	1.4	3.	2. 2.	2.2 .5	.7	3. 4.	9.1	;	.1	4.	6.6	1.3	1.2	.2	.3	6.	7.1
9-Mar-95	M03A0315	24.	17.1	111.	160	-1	.2	.2	1.4	.8		.5 .5	.7	41.	13.	;	.1	3.	6.3	1.3	1.2	.2	.3	5.	6.4
13 Mar-95	M03A0316	17.	17.2	121.	151	-1	.2	.2	1.4	1.	1.6	.5 .5	.7	2.	11.6	Ι;	.1	3.	6.1	1.3	1.2	.2	.3	11.	6.7
16-Mar-95	M03A0317	23.	18.3	114.	144	-!	.2	.3	1.3	3.	1.9 i 2.1	.5 .5	.7	2.	11.1	1 7	.1	2.	5.6	1.3	1.2	.2	.3	3.	6.3
20-Mar-95	M03A0318	18.	19.	112.	136	-1	.2	.2	1.3	3.	2.1	.5 .5	.7	2.	8.3	'i	.1	3.	5.1	1.3	1.2	.2	.3	4.	6.1
23-Mar-95	M03A0319	19.	19.6	119.	128	:	.2	.2	1.	2.	2.1	.5	.7	22.	10.4	1 7	.1	5. 5.	4.7	1.3	1.2	.2	.3	40.	9.5
27 Mar-95	M03A0320	14.	19.7	130.	124	<u> </u>	.2	3.	1.3	2.	4.1		<u>.,</u>		10.4	<u> </u>	<u></u> -		-316		• • •				لــــــــــــــــــــــــــــــــــــــ

Discharge sample of 17-Oct destroyed in flood.

Metals values in PPB.

MONTHLY PROGRESS REPORT Summary

French Ltd. Project

FLTG, Incorporated

2.2 **Problem Areas and Recommended Solutions**

Solution

Maintain high level of safety awareness.

Daily raffle ticket program. Daily safety meetings. Supervisory safety contacts.

On-the-Job safety attention.

Contact all employees at least twice per day on safety issues. Review job details as work proceeds. Stop and challenge approach.

Hazard detection and response.

Safety inspections. HAZOP's on all jobs.

Constant awareness.

Lagoon remediation confirmation.

Certification letter from EPA.

Low flow in some INT pumping and

injection wells.

Vacuum enhanced pumping. Increase injection pressure in some areas.

Slow progress on wetlands excavation.

Adjust work schedules when having wet weather; flexible field work plan.

Increase INT zone remediation rate.

Increase pumping and injection rates.

Cell D water handling.

Inject in Cell E subsurface.

Low flushing rate in INT zone just west of INT-11 wall.

Install two injection wells and one pumping well.

Nutrient circulation on for west end of

Install one pumping well.

INT plume.

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2.3 Problems Resolved

None.

2.4 Deliverables Submitted

Annual Groundwater Monitoring Report February, 1995 monthly report Natural Attenuation Work Plan Refinement Notice RN-082 Refinement Notice RN-083

2.5 Upcoming/Ongoing Events and Activities

Daily safety meetings and inspections.

Daily safety awareness program.

Emphasis on multiple work assignments.

Emphasis on hazard identification and response.

Attention to safety details.

Respond to HAZOP audits.

Increase nutrient and oxygen circulation in specific INT areas.

Daily well pump checks and maintenance.

Aquifer compliance testing in select areas and zones.

Operate S1 and INT wells for expedited in-situ bioremediation.

Ship surplus equipment.

Injection of Cell D water.

MONTHLY PROGRESS REPORT Summary

French Ltd. Project

FLTG, Incorporated

Evaluate vegetation in Lagoon area.

Operate Data Base Management System.

Total Quality process.

Continue biological activity monitoring in S1 wells and INT wells.

Issue permeability results of INT-11 area containment wall tests.

Minimize carbon usage in Water Treatment Plant.

Develop lagoon closure plan.

Submit MCC-1 area remediation report.

Continue wetlands restoration project.

2.6 Key Staffing Changes

None.

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2.7 Percent Complete

Research & Development	- 98%
Facilities	- 100%
Slough	- 100%
Subsoil Investigation	-100%
Floodwall	-100%
Lagoon Remediation	-100%
Groundwater	- 79%
Lagoon Dewatering/Fixation	- 100%
Water Treatment	- 76%
Wetlands	- 75%
Demobilization	- 65%
Monitoring	- 61%

2.8 Schedule

All deliverables are on schedule.

Complete wetlands construction by July 1, 1995.

Complete active aquifer remediation by March 1, 1996.

2.9 Operations and Monitoring Data

The operations and monitoring data are submitted as parts of Sections 3.0, 4.0, 5.0, and 6.0 of this report, and the supporting data are stored in secure storage at the French project office.

2.10 Credits Accrued/Applied

Status of Credits

	Accrued this period	Accrued to date	Applied this period	Applied to date	Running total
December 1990	34	34	0	0	34
December 1991	0	100	0	0	100
December 1992	0	101	0	2	99
December 1993	0	104	0	4	100
January 1994	0	104	0	4	100
February 1994	0	104	0	4	100
March 1994	0	104	0	4	100
April 1994	0	104	0	4	100
May 1994	0	104	0	4	100
June 1994	0	104	0	4	100
July 1994	5	109	0	4	105
August 1994	0	109	0	4	105
September 1994	0	109	0	4	105
October 1994	0	109	0	4	105
November 1994	0	109	0	4	105
December 1994	0	109	0	4	105
January 1995	0	109	0	4	105
February 1995	0	109	0	4	105
March 1995	0	109	0	4	105

MONTHLY PROGRESS REPORT Summary

French Ltd. Project

FLTG, Incorporated

2.11 Community Relations

Maintained 24-hour, call-in Hot Line.

Conducted five site tours for interested parties.

Contacted nearby local residents with update on site activities.

Contacted several Riverdale residents with site status report.

Leased selected property along Maple Drive in Riverdale.

Reviewed Barett Station community development.

3.0 LAGOON

3.1 Summary of Activities

Evaluating test plots of various plants in Cell E. Planted test plots of 15 different kinds of trees. Fertilized the grass areas with diammonium phosphate.

Injected about 196,000 gallons of "clean" Cell D water in Cell E subsurface.

Operated aerator in Cell D to expedite biomass degradation.

Evaluating various options for gradient control inside the lagoon.

Reviewed CH2M Hill's QAQC report on Cell D/F remediation confirmation samples.

3.2 Problems and Response Action

<u>Problem</u>	Recommended Solution
Ground cover growth slow in Cell E.	Hydroseed a rye grass blend. Water frequently. Evaluate different grass blends.
Poor tree growth in Cell E.	Evaluate different types of trees. Design an irrigation system.
Treat Cell D water.	Subsurface injection.

3.3 Problems Resolved

None.

MONTHLY PROGRESS REPORT Lagoon Bioremediation

French Ltd. Project

FLTG, Incorporated

3.4 Deliverables Submitted

None.

LAGOON.03

3.5 Upcoming Events and Activities

Maintain pH, DO, OUR, and nutrient levels in Cell D.

Operate aerator/mixer in Cell D as required.

Inject Cell D water in Cell E subsurface.

Hydroseed Cell E and Cell F as required.

Maintain vegetation in Cell E.

4.0 GROUNDWATER AND SUBSOIL REMEDIATION

4.1 Summary of Activities

4.1.1 Operation of Production and Injection Well Systems

Operation of the production and injection wells systems during March 1995 is summarized in Table 4-1. Flows from the production well system are summarized in Table 4-2 and Figure 4-1. Flows into the injection well system are summarized in Table 4-3 and Figure 4-2. Individual well flows are summarized in Table 4-4. INT-55 and -56 were added to VEP program.

4.1.2 Operational Monitoring

Operational monitoring associated with the groundwater and subsoil remediation system during March 1995 is summarized in Table 4-5. Results of the annual GW sampling have been issued to the EPA and placed in the appropriate repositories.

4.1.3 Data Management and Evaluation

Operational monitoring data from the groundwater and subsoil remediation system for this reporting period were entered into FLTG's database. Tables and figures for this section of the Monthly Progress Report were generated from this database.

4.2 Problems and Response Actions

Groundwater production and injection rates were at or above the targets of both production and injection wells. The new goal for production wells rates is 100 gpm. See Table 4-1. Nutrient and dissolved oxygen concentrations in injection water were at or close to target levels. No specific response action is planned.

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Table 4-1

Groundwater System Operation - March 1995
Reporting Period: February 28 - March 31 (32 days)

Production System

No. of production wells: 111 (S1 unit, 53; INT unit, 58)

No. of operational wells by end of month: 63 (S1 unit, 17; INT unit, 46)

Changes in system since last month: add 55, 56 to VEP; complete INT-228 as prod. well

No. of wells off line having reached criteria: 32

16 wells off inside lagoon

Groundwater produced: 5.0 M gal; 247.0 M gal since startup based on main meter

Total production rate: avg. 117.3 gpm (target 100 gpm); range 91-124 gpm

S1 production rate: avg. 61.0 gpm; avg. 3.0 gpm per metered well INT production rate: avg. 56.3 gpm; avg. 1.3 gpm per metered well

Total flow rate apportioned between S1 and INT units based on individual well meter readings; average flows based on 32 days operation

TOC (non-volatile) concentration avg. 41 ppm; range 32-54 ppm

TOC mass removed: 1,706 lb. (366,071 lb. since startup); 53 lb./day

Injection System

No. of injection wells: 65 (S1 unit, 19 [11 on line]; INT unit, 46 [31 on line])

Rainfall during period: 3.85 inches

Changes in system since last month: converted S1-133 to injection; completed INT-226 and -227 as new injection wells

Groundwater injected: 6.4 M gal (144.4 M gal since startup) based on main meters

S1 unit injected: 3.9 M gal (79.1 M gal since startup)

INT unit injected: 2.5 M gal (65.3 M gal since startup)

Total injection rate: avg. 138 gpm (target 100 gpm); range 124-149 gpm

S1 injection rate: avg. 49.5 gpm; avg. 4.5 gpm per well INT injection rate: avg. 60.9 gpm; avg. 2.0 gpm per well

Total flow rate apportioned between S1 and INT units based on individual well meter readings; average flows

based on 28 days operation

Oxygen added to injection water: 10,735 lb.; 335.5 lb./day used (input efficiency = 24%) Avg. DO in injection water: S1, 36.8 ppm; INT, 57.9 ppm (target 40 ppm) \Rightarrow 81 lb./day injected

Volume of 9.1% w/w KNO₃ nutrient solution added to INT unit, and S1-North wells: 7.592 gal

Nutrient flow rate: 237.3 gpd, 0.31% of INT + S1-North inflow rate (target 0.38%) Calculated injection water NO₃ concentration: 33.1 mg/L-N (target 50 mg/L-N)

Note that average monthly flow rates at individual wells (calculated from weekly individual well flow meter readings) are not used directly to determine S1 and INT unit inflows and outflows, but are used to apportion total production and injection flows (calculated from daily main production and injection meter readings) between S1 and INT units. Average flows are based on the 32 day reporting period.

Table 4-2

Daily Groundwater Production and TOC Removal

March 1995

(gpd) (gpm) (mg/L) (kg/day) 28-Feb 1147 178,200 124 41 28 1-Mar 1148 135,700 94 46 24 2-Mar 1149 150,700 105 43 25 3-Mar 1150 142,800 99 41 22 4-Mar 1151 141,000 98 39 21 5-Mar 1152 141,000 98 48 26 6-Mar 1153 130,900 91 38 19 7-Mar 1154 153,800 107 38 22 8-Mar 1155 149,400 104 42 24 9-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th></td<>						
Day	Date	Project	T-101	T-101	T-101	T-101
(FQ-101A) Rate Ave. TOC TOC Loadin (gpd) (gpm) (mg/L) (kg/day)		- 1				
(gpd) (gpm) (mg/L) (kg/day) 28-Feb 1147 178,200 124 41 28 1-Mar 1148 135,700 94 46 24 2-Mar 1149 150,700 105 43 25 3-Mar 1150 142,800 99 41 22 4-Mar 1151 141,000 98 39 21 5-Mar 1152 141,000 98 48 26 6-Mar 1153 130,900 91 38 19 7-Mar 1154 153,800 107 38 22 8-Mar 1155 149,400 104 42 24 9-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 <td< td=""><td></td><td></td><td></td><td>Rate</td><td></td><td>TOC Loading</td></td<>				Rate		TOC Loading
28-Feb 1147 178,200 124 41 28 1-Mar 1148 135,700 94 46 24 2-Mar 1149 150,700 105 43 25 3-Mar 1150 142,800 99 41 22 4-Mar 1151 141,200 98 39 21 5-Mar 1152 141,000 98 48 26 6-Mar 1153 130,900 91 38 19 7-Mar 1154 153,800 107 38 22 8-Mar 1155 149,400 104 42 24 9-Mar 1155 162,700 113 39 24 10-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 107 37 22 27-Mar 1174 166,000 108 41 24 Month Average 155,956 108 41 24				(gpm)		
2-Mar 1149 150,700 105 43 25 3-Mar 1150 142,800 99 41 22 4-Mar 1151 141,200 98 39 21 5-Mar 1152 141,000 98 48 26 6-Mar 1153 130,900 91 38 19 7-Mar 1154 153,800 107 38 22 8-Mar 1155 149,400 104 42 24 9-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1166 166,400 116 51 32 20-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 22-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1171 161,000 115 51 32 27-Mar 1174 166,100 115 51 32 27-Mar 1175 153,800 107 37 22 26-Mar 1173 154,600 107 37 22 26-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 Month Average 155,956 108 41 24	28-Feb	1147	178,200	124	41	
3-Mar 1150 142,800 99 41 22 4-Mar 1151 141,200 98 39 21 5-Mar 1152 141,000 98 48 26 6-Mar 1153 130,900 91 38 19 7-Mar 1154 153,800 107 38 22 8-Mar 1155 149,400 104 42 24 9-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1171 161,000 112 54 33 25-Mar 1171 155,400 109 37 22 26-Mar 1171 155,500 109 37 22 26-Mar 1173 154,600 107 37 22 26-Mar 1175 159,300 111 28 17 29-Mar 1176 155,500 108 41 24 Month Average 155,956 108 41 24	1-Mar	1148	135,700	94	46	24
4-Mar 1151 141,200 98 39 21 5-Mar 1152 141,000 98 48 26 6-Mar 1153 130,900 91 38 19 7-Mar 1154 153,800 107 38 22 8-Mar 1155 149,400 104 42 24 9-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1171 161,000 115 51 32 27-Mar 1174 166,100 115 51 32 28-Mar 1177 153,800 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1177 153,800 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1177 153,800 107 35 20 31-Mar 1176 155,400 108 41 24 Month Average 155,956 108 41 24	2-Mar	1149	150,700	105	43	25
5-Mar 1152 141,000 98 48 26 6-Mar 1153 130,900 91 38 19 7-Mar 1154 153,800 107 38 22 8-Mar 1155 149,400 104 42 24 9-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23	3-Mar	1150	142,800	99	41	22
6-Mar 1153 130,900 91 38 19 7-Mar 1154 153,800 107 38 22 8-Mar 1155 149,400 104 42 24 9-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 107 35 20 31-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 108 41 24 Month Average 155,956 108 41 24	4-Mar	1151	141,200	98	39	21
7-Mar 1154 153,800 107 38 22 8-Mar 1155 149,400 104 42 24 10-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1166 166,400 116 51 32 20-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 22 26-Mar 1171 161,000 112 54 33 22 26-Mar 1171 161,000 112 54 33 22 26-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 109 37 22 26-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1177 153,800 107 35 20 31-Mar 1177 153,800 107 35 23 Month Average 155,956 108 41 24	5-Mar	1152	141,000	98	48	26
8-Mar 1155 149,400 104 42 24 9-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 22 26-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1177 153,800 107 35 20 31-Mar 1177 153,800 107 35 20 31-Mar 1177 153,800 107 35 23 Month Average 155,956 108 41 24	6-Mar	1153	130,900	91	38	19
9-Mar 1156 162,700 113 39 24 10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1177 153,800 107 35 20 31-Mar 1177 153,800 107 35 20 31-Mar 1177 155,956 108 41 24	7-Mar	1154	153,800	107	38	22
10-Mar 1157 151,000 105 37 21 11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400	8-Mar	1155	149,400	104	42	24
11-Mar 1158 154,600 107 58 34 12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000	9-Mar	1156	162,700	113	39	24
12-Mar 1159 143,200 99 38 21 13-Mar 1160 164,000 1114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	10-Mar	1157	151,000	105	37	21
13-Mar 1160 164,000 114 35 22 14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	11-Mar	1158	154,600	107	58	34
14-Mar 1161 165,100 115 33 21 15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	12-Mar	1159	143,200	99	38	21
15-Mar 1162 167,300 116 32 20 16-Mar 1163 161,300 1112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 106 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	13-Mar	1160	164,000	114	35	22
16-Mar 1163 161,300 112 32 20 17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107<	14-Mar	1161	165,100	115	33	21
17-Mar 1164 155,100 108 40 23 18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115<	15-Mar	1162	167,300	116	32	20
18-Mar 1165 170,700 119 40 26 19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 <t< td=""><td>16-Mar</td><td>1163</td><td>161,300</td><td>112</td><td>32</td><td>20</td></t<>	16-Mar	1163	161,300	112	32	20
19-Mar 1166 166,400 116 51 32 20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	17-Mar	1164	155,100	108	40	23
20-Mar 1167 153,600 107 46 27 21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	18-Mar	1165	170,700	119	40	26
21-Mar 1168 154,800 108 39 23 22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	19-Mar	1166	166,400	116	51	32
22-Mar 1169 157,500 109 38 23 23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	20-Mar	1167	153,600	107	46	27
23-Mar 1170 167,400 116 45 29 24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	21-Mar	1168	154,800	108	39	23
24-Mar 1171 161,000 112 54 33 25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	22-Mar	1169	157,500	109	38	23
25-Mar 1172 156,900 109 37 22 26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	23-Mar	1170	167,400	116	45	29
26-Mar 1173 154,600 107 37 22 27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	24-Mar	1171	161,000	112	54	33
27-Mar 1174 166,100 115 51 32 28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	25-Mar	1172	156,900	109	37	22
28-Mar 1175 159,300 111 28 17 29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	26-Mar	1173	154,600	107	37	22
29-Mar 1176 155,400 108 41 24 30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	27-Mar	1174	166,100	115	51	32
30-Mar 1177 153,800 107 35 20 31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	28-Mar	1175	159,300	111	28	17
31-Mar 1178 165,100 115 37 23 Month Average 155,956 108 41 24	29-Mar	1176	155,400	108	41	24
Month Average 155,956 108 41 24	30-Mar	1177	153,800	107	35	20
			165,100	115	37	23
	Month Average	Month Average		108	41	24
Month Total 4,990,600 1706 lbs. 766	Month Total		4,990,600		1706 lbs.	766

Table 4-3

Daily Injection Flows

March 1995

Date 28-Feb 1-Mar	Project Day	INT-90/ S1 No Injection FQ90	/100 orth	(not INT	North -90/1001						
28-Feb	Day	S1 No Injection FQ90	orth	(not INT							
	Day	Injection FQ90		•	(not INT-90/100)		S1 South		Total		
		FQ90		Niectio	n Wells	Injection		Injecti	-	Oxygen	Nutrients
	1147)5 İ		-Q-906	Meter FO		Rate		CAYGOII	Huulond
	1147	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)	(gpd)	(gpm)	lbs	Gallons
1.Mar		30,600	21	38,400	27	121,000	84	190,000	132	320	228
	1148	30,200	21	37,400	26	119,800	83	187,400	130	505	220
2-Mar	1149	29,800	21	37,700	26	117,600	82	185,100	129	290	251
3-Mar	1150	30,200	21	37,800	26	116,100	81	184,100	128	400	243
4-Mar	1151	30,900	21	32,100	22	115,900	80	178,900	124	220	221
5-Mar	1152	31,600	22	32,300	22	116,800	81	180,700	125	200	214
6-Mar	1153	33,200	23	34,200	24	113,400	79	180,800	126	360	193
7-Mar	1154	33,400	23	41,300	29	114,600	80	189,300	131	320	251
8-Mar	1155	30,600	21	40,200	28	115,500	80	186,300	129	320	179
9-Mar	1156	34,300	24	41,700	29	116,400	81	192,400	134	395	201
10-Mar	1157	36,100	25	40,300	28	118,100	82	194,500	135	260	248
11-Mar	1158	34,600	24	41,000	28	120,300	84	195,900	136	400	224
12-Mar	1159	33,400	23	39,700	28	117,400	82	190,500	132	320	218
13-Mar	1160	34,300	24	40,600	28	121,800	85	196,700	137	340	217
14-Mar	1161	33,300	23	41,200	29	119,500	83	194,000	135	320	206
15-Mar	1162	33,700	23	44,600	31	117,400	82	195,700	136	360	161
16-Mar	1163	33,600	23	44,200	31	124,500	86	202,300	140	320	200
17-Mar	1164	33,400	23	43,900	30	126,800	88	204,100	142	295	243
18-Mar	1165	33,900	24	44,100	31	127,900	89	205,900	143	400	244
19-Mar	1166	34,700	24	44,400	31	129,200	90	208,300	145	295	232
20-Mar	1167	33,500	23	43,100	30	125,500	87	202,100	140	400	206
21-Mar	1168	37,100	26	43,400	30	123,400	86	203,900	142	360	270
22-Mar	1169	42,100	29	45,500	32	125.800	87	213,400	148	340	285
23-Mar	1170	41,800	29	45,000	31	128,100	89	214,900	149	320	274
24-Mar	1171	33,200	23	45,900	32	129,700	90	208,800	145	380	293
25-Mar	1172	38,900	27	44,500	31	125,700	87	209,100	145	300	273
26-Mar	1173	38,600	27	44,400	31	125,300	87	208,300	145	300	236
27-Mar	1174	38,400	27	45,400	32	127,900	89	211,700	147	300	232
28-Mar	1175	37,800	26	47,100	33	126,000	88	210,900	146	400	281
29-Mar	1176	38,300	27	48,200	33	124,600	87	211,100	147	360	278
30-Mar	1177	39,400	27	47,200	33	125,900	87	212,500	148	315	307
31 <u>-Mar</u>	1178	40,100	28	44,100	31	125,500	87	209,700	146	_320	263
Month Av	Month Average 34,844 :		24	41,903	29	121,981	85	198,728	138	335	237
Month Total 1,115		1,115,000		1,340,900		3,903,400		6,359,300		10,735	7,592

Table 4-4

Average Production and Injection Flow Rates - March 1995

S1 Production Welle (17)

Flow rates are everages for the period February 28 - March 31 (32 days) \$1 Injection Wells (11)

INT Production Wells (46)

INT Injection Wells (31)

Well ID	gpm) Well ID	gpm	Well ID	gpm	Well ID	gpe
S1-1	ÖFF	S1-49	OFF	<u> </u>		<u> </u>	
S1-2	OFF			INT-1	1.3	INT-63	2.
S1-3		S1-50	OFF	INT-2	0.9	INT-64	3.1
,	OFF	S1-51	OFF	INT-3	0.2	INT-71	2.
S1-4	OFF	\$1-62	OFF	INT-4	0.2	INT-72	1.4
\$1-6	OFF	S1-53	OFF	INT-5	1.6	INT-73	3.
S1-6	OFF	S1-54	5.7	INT-6	1.4	INT-74	1.3
S1-7	OFF	S1-65	2.3	INT-7	0.2	INT-75	0.0
S1-8	OFF	S1-56	OFF	INT-8	1.5	INT-76	3.
S1-9	OFF	S1-57	OFF	INT-9	1.3	INT-77	4.
S1-10	OFF	S1-58	OFF	INT-10	3.6	INT-78	3.
S1-11	OFF	S1-59	3.0	INT-11	0.4	INT-79	0.
S1-12	OFF	S1-65	6.0	INT-12	1.4	INT-BO	0.
S1-13	OFF	S1-66	4.0	INT-13	0.4	INT-81	6.
S1-14	OFF	S1-67	5.0	INT-14	0.2	INT-82	0.0
S1-15	OFF	S1-68	6.4	INT-15	OFF	INT-B3	0.6
\$1-16	OFF	\$1-69	3.5	INT-16	OFF	INT-84	1.3
S1-17	1.4	\$1-70	3.3	INT-17	OFF	INT-85	OF
S1-18	3.5	1 1					
S1-19	2.7	\$1-101	4.3	INT-18	0.5	INT-86	OF
		\$1-133	5.9	INT-19	0.3	INT-87	OF
S1-20	7.1	1 1 1		INT-20	0.2	INT-88	OF
S1-21	1.1	Total	49.5	INT-21	0.6	INT-B9	OF
S1-22	3.0			INT-22	0.3	INT-90	OF
S1-23	OFF			INT-23	0.1	INT-91	OF
S1-24	OFF	Average	4.5	INT-24	0.5	INT-92	OF
S1-25	4.6		l l	INT-25	OFF	INT-93	OF
S1-26	1.9			INT-26	0.5	INT-94	OF
\$1-27	4.8	Welle S1-58, 1	59 65 66	INT-27	1.4	INT-95	OF
S1-28	3.1	67, 68, 69, ar		INT-28	0.4	INT-96	OF
S1-29	1.9	oxygen- and n		INT-29	OFF	INT-97	1
\$1-30	4.6	emended inject					
				INT-30	OFF	INT-98	1.0
S1-31	OFF	Subtotel	41.5	INT-31	OFF	INT-99	OF
\$1-32	3.1	·		INT-32	OFF	INT-100	OF
S1-33	OFF	All other S1 w	veils receive	INT-33	OFF	INT-201	OF
S1-34	OFF	oxygenated in	jection	INT-55	2.5	INT-202	0.0
S1-35	OFF	water only		INT-56	0.6	INT-203	0.4
S1-36	OFF	1		INT-57	1.6	INT-204	3.1
S1-37	OFF			INT-58	3.4	INT-218	1.
S1-38	OFF	1		INT-59	0.3	INT-219	1.
\$1-39	OFF	l		INT-60	2.0	INT-220	0.
S1-40	OFF			INT-61	1.4	INT-221	0.
S1-41	OFF	1		INT-62	1.0	INT-222	3.9
S1-42	OFF	1		INT-65	0.8	INT-223	1.5
51-43	OFF	1		INT-66	0.7	INT-223	3.0
S1-44	OFF	1			0.3		
S1-45	OFF	1		INT-143	4 ' 1	INT-225	3.0
S1-46	-	1		INT-205	1.2	INT-226	0.1
	OFF			INT-206	0.7	INT-227	0.1
S1-47	OFF	1		INT-207	0.8	· · · · · · · · · · · · · · · · · · ·	l
S1-48	OFF	I		INT-208	4.2	Total	60.
S1-60	OFF	1		INT-209	0.3		L
S1-61	0.3	I		INT-210	2.8		
S1-62	4.8			INT-211	OFF	Average	2.0
S1-63	1.9	1		INT-212	1.8		
S1-64	1.3	1		INT-213	2.5		
		1			OFF	AH MIT :-:	
Total	51.2	İ		INT-214		All INT injects	
1012	91.2	Near		INT-215	2.8	seceive oxyge	
		Notes		INT-216	OFF	nutrient-amen	
!		OFF - well inoperative		INT-217	5.3	injection water	•
Average*	3.0	NM - well running b		INT-228	0.1		
of meter	ed wells	PP - well in pulse pu	mping mode	Total	56.6		
					• 1		

Note: total and average flow rates for S1 and INT units are corrected (per main flow mater readings) for use in Table 4-1.

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Table 4-5
Operational Monitoring - March 1995

Activity	Frequency	Purpose
Check production and injection wells for	Daily	Identify and respond to
pump, meter, and level control opera- tion, injection pressure, and gas buildup.	Bully	individual well problems; maintain operating effi- ciency.
Flow meter readings	Weekly	Identify and respond to individual well problems; maintain operating efficiency.
Read groundwater treatment plant in- flow and outflow meters; nutrient injec- tion flow meters; oxygen flows, pressure and temperature; and injection header back pressure.	2x daily	Identify and respond to treatment plant problems; control nutrient and injection flow rates.
Measure T-101 influent TOC.	2x daily	Track TOC removal.
Measure dissolved oxygen at 6 representative S1 and INT injection wells.	Weekly	Control oxygen injection.
Sample T-101 influent for VOC, TOC, and nutrient analysis, (1) from all operating production wells, and (2) from all wells located outside the floodwall.	Monthly	Develop chemical mass balance.
Conduct water levels DO and TOC on 22 monitoring wells.	Weekly	Define progress of new INT wells and shut-off areas. Track DO breakthru.
Conduct water levels on shut-off wells.	Monthly	Track level recovery in shut-off wells.
Conduct TOC and DO on select production wells.	Weekly	Track TOC and DO levels in critical areas.

MONTHLY PROGRESS REPORT

French Ltd. Project

FLTG, Incorporated

Groundwater and Subsoil Remediation

Figure 4-1

31-Mar

Groundwater and Subsoil Remediation

Figure 4-2

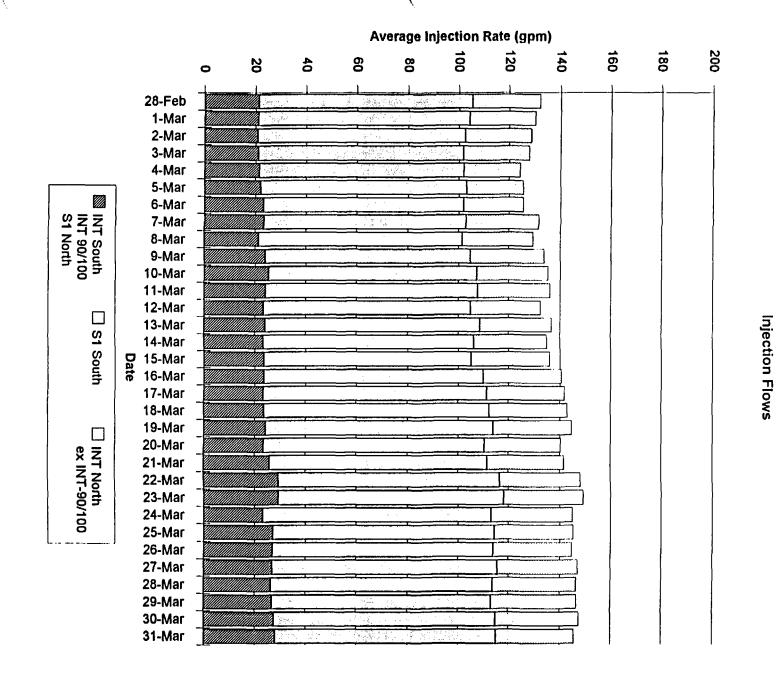


Figure 4-3

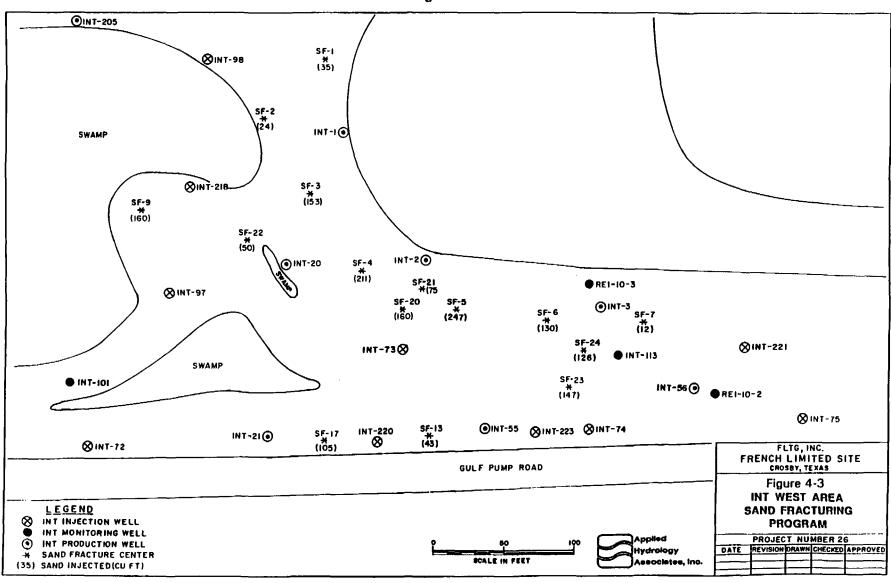
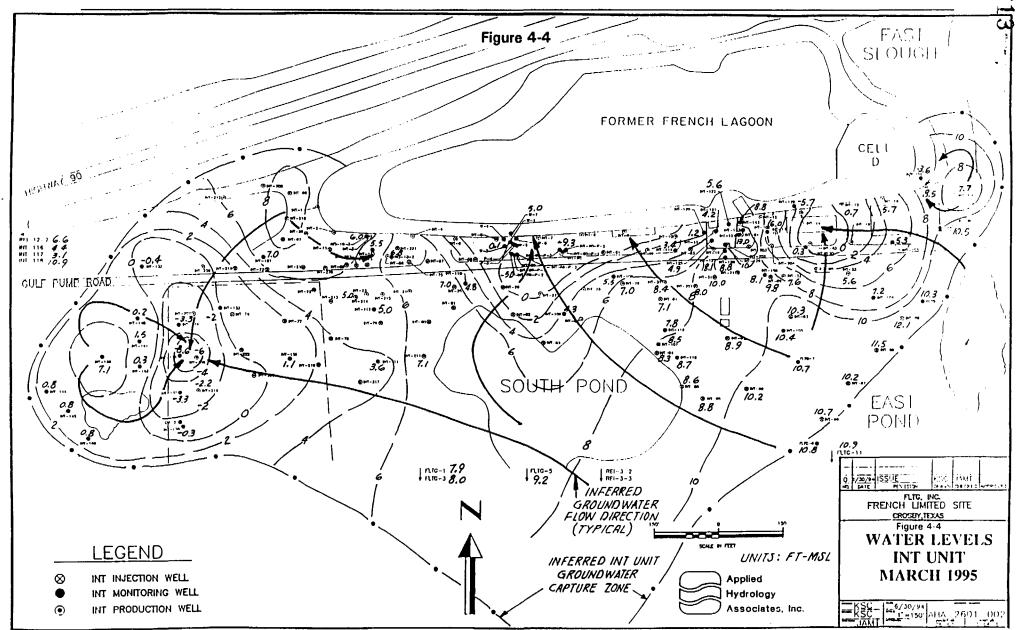


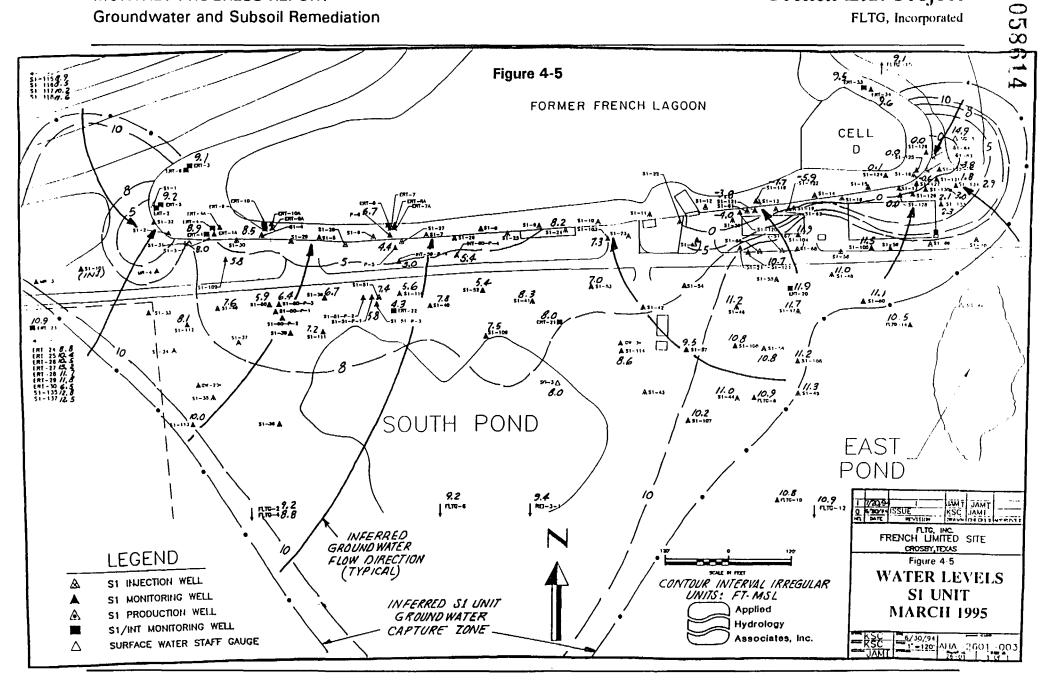
Table 4-6
Sand-Fracture Area Injection and Pumping Rates

	INT Injection			INT Pumping				
Well #	Pre sand fracture average (gpm)	Post sand fracture average (gpm)	Average After 60 Days	Well #	Pre sand fracture average (gpm)	Post sand fracture average (gpm)	Addition of vacuum enhancement post sand fracture (gpm)	Average after 60 days
72	0.77	1.29	1.37	1	1.15	1.41	1.71	1.48
73	0.35	3.66	3.81	2	0.68	1.25	1.75	.98
74	1.00	1.24	1.78	3	0.05	0.14	0.18	.19
75	1.00	0.58	.98	20	0.07	0.14	0.19	.19
97	0.89	1.44	1.31	21	0.31	0.37	0.57	.60
98	0.81	1.30	1.68	55	1.78	1.91		3.06
218	1.31	1.31	1.17	56	.29	.39		.73
220	1.80	0.85	.91					
221	0.60	0.78	.81					
223	0.78	1.16	1.40					

Pumping averages are actual (disregarding electrical maintenance down time).

Added 55 and 56 to VEP - March 13, 1995.





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4.3 Pending Issues

4.3.1 S1 Unit Pulse Pumping

No wells are on a pulse pump program this period.

4.4 Operational Refinements

A 60-day evaluation of the sand fracturing program at the near west end is included as Table 4-6.

4.5 Data Summary and Discussion

4.5.1 Groundwater Production and Injection

Groundwater production rates were adjusted to 100 gpm to compensate for the expanded shut-off. Injection rate target remains the same.

4.5.2 Groundwater Levels and Flow Directions

The current extent of contaminated groundwater is contained within the S1 and INT extraction system capture zones.

Water level contour maps are included as Figure 4-4 and Figure 4-5.

4.5.3 TOC in shallow groundwater

TOC analyses on production wells were completed the first week in March. The analyses are in Table 4-8 and Table 4-9. The overall average TOC level continues to drop.

4.5.4 In-Situ Bioremediation

Complimentary injection wells were shut off to balance production wells reaching criteria. The emphasis continues to be to maximize delivery of oxygen and nutrients to the INT system. Dissolved oxygen analysis was conducted on the monitoring wells during the third well volume pumped.

A work plan was developed for natural attenuation modeling and submitted to USEPA.

Three Biological Activity Monitors (BAM) were installed in each of 11 S1 monitoring wells and 14 INT monitoring wells during the first week of February. Coupons were incubated for 24-26 days and replaced for a second incubation period in March. The data for both sets of coupons are summarized in Table 4-7. The data were standardized to a 26 day incubation period for comparison. The mean activity for

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the system has decreased slightly in both the S1 and INT zones. Variation between coupons in the same well, as shown by standard deviation, has also fallen slightly in both zones.

Figure 4-6 shows activity in the S1 zone during February and March. One standard deviation of the mean is shown on the bars. High activity was observed inside the flood wall in both February and March. Activity was also high outside the wall at the west end in March. Activity was intermediate in the central region and lowest in the eastern wells.

Activity in the INT zone during February and March is shown in Figure 4-7. Activity was fairly uniform throughout the zone during February but fell significantly in six (6) out of seven (7) wells in the eastern region in March. Inside the flood wall, activity increased in two (2) out of three (3) wells in March.

4.6 Schedule

Two new INT production wells are scheduled for completion in April, 1995.

Table 4-7 **Biological Activity Monitor Results and Statistics**

S1 MONITOR WELLS

	WELL	FEB		MAR	
LOCATIO	NUMBER	MEAN	STDS	MEAN	STDS
INSIDE	ERT-9A	6.24	1.37	2.34	0.08
INSIDE	P-6	0.84	0.02	1.29	0.26
INSIDE	126	1.58	0.09	1.31	0.06
EAST	112	0.38	0.05	0.18	0.03
EAST	110	0.46	0.05	0.12	0.04
CENTRAL	121	0.66	0.02	0.64	0.03
CENTRAL	123	1.05	0.02	0.69	0.09
CENTRAL	106	0.46	0.08	0.71	0.00
CENTRAL	108	0.57	80.0	0.27	0.03
WEST	131	1.24	0.01	2.83	0.28
WEST	133	0.51	0.04	1.83	0.30
MEAN	MEAN	1.27	0.17	1.11	0.11
	INT MONIT				
	WELL	FEB		MAR	
LOCATIO	NUMBER	MEAN	STDS	MEAN	STDS
INSIDE	W-7	0.75	0.01	0.96	0.03
INSIDE	129	0.76	0.03	0.63	0.13
INSIDE	131	0.48	0.04	0.72	0.02
EAST	134	0.44	0.11	0.12	0.05
EAST	101	0.38	0.10	0.21	
EAST	REI-10-3	1.18	0.29	0.20	0.04
EAST	113	0.65	0.07	0.13	0.00
EAST	112	0.57	0.07	0.19	0.01
EAST	111	0.50	0.03	0.76	0.01
EAST	W-3	0.60	0.15	0.11	0.05
CENTRAL	108	0.54	0.00	0.41	0.05
CENTRAL	1 <i>2</i> 5				
CENTRAL	102	0.63	0.02	0.56	
CENTRAL	106	0.36	0.12	0.37	0.29
CENTRAL	105	0.27	0.06	0.68	0.05
MEAN	MEAN	0.58	0.08	0.43	0.06

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Figure 4-6

Coupon HMB Values for S1 Zone
1995 BAM PROGRAM, FRENCH LTD. PROJECT

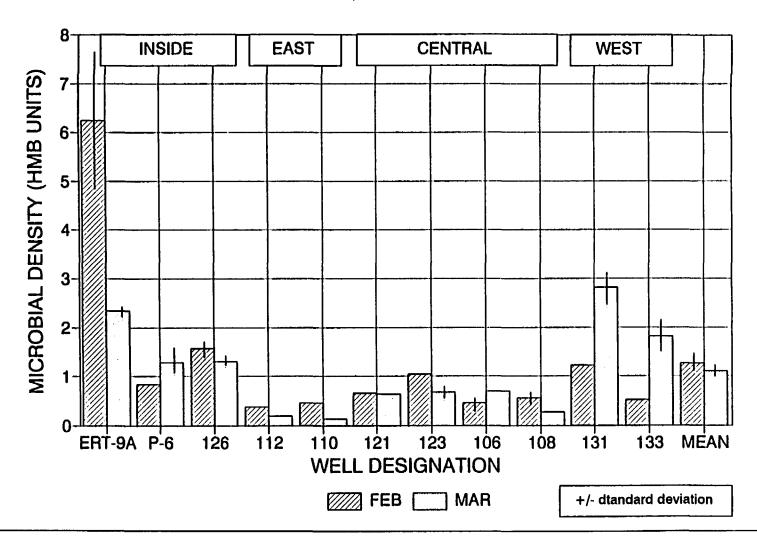


Figure 4-7

Coupon HMB Values for INT Zone

1995 BAM PROGRAM, FRENCH LTD. PROJECT

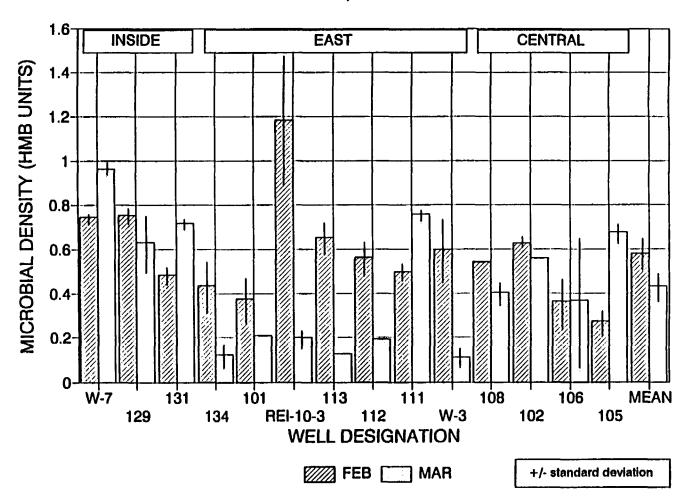


Table 4-8 History of TOC Concentrations at S1 Production Wells

	HISTORY OF TOC CONCENTRATIONS								
ł	AT S1 PRODUCTION WELLS								
Well	Baseline	Mar	June	Sep	Nov	Dec	Jan	Feb	Mar
ID	Nov-Dec 91	1994	1994	1994	1994	1994	1995	1995	1995
	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
\$1-1	290	1,317	1,360	1,133	1,215	NS	1,592	NS	NS
S1-2 S1-3	190	1,510	1,139	1,251	NS	NS	1,044	NS	NS
S1-4	370 47	1,037 1,025	755 668	566 620	750 576	NS NS	624 582	NS NS	NS
S1-5	51	1,151	473	NS	NS	NS	504	NS	NS NS
S1-6	51	1,315	892	928	NS	NS	774	NS	NS
S1-7	200	1,327	786	660	NS	NS	708	NS	NS
S1-8	64	1,516	1,110	935	909	NS	708	NS	NS
S1-9	77	2,085	1,589	567	NS	NS	1,520	NS	NS
S1-10	46	2,540	1,800	567	2,001	NS	2,205	1,860	448
S1-11	120	NS	1,751	2,510	1,825	NS	2,121	2,320	40
S1-12	140	2,129	1,445	2,355	1,086	NS	1,850	1,960	344
S1-13 S1-14	520 590	990	722	1,077	960	NS	678	820	312
S1-14	590 5,300	1,616 2,778	1,443	1,440	1,000	NS NC	1,392	1,430	592
S1-16	8,900	2,770	2,280 1 718	2,583 NS	1,450	NS NS	2,597 1,050	2,530 330	1488 136
S1-17	6,800	344	180	141	92	NS NS	73	76	72
S1-18	2,200	44	34	49	45	NS	24	37	72
S1-19	20	33	28	39	22	NS	14	16	32
S1-20	120	141	50	60	43	NS	21	16	17
\$1-21	65	17	8	42	11	NS	6	3	11
S1-22	290	4	19	64	31	NS	30	55	NS
\$1-23	350	27	21	29	20	NS	13	12	NS
\$1-24 \$1.25	250	16	18	42	17	NS	13	10	NS
S1-25 S1-26	550 540	16 22	15	33	23	NS	13	13	NS
S1-26	220	60	18 42	49 88	16 128	NS NS	14 25	11 31	NS NS
S1-28	370	12	15	21	18	NS	14	16	NS
S1-29	670	23	20	33	20	NS	16	11	NS
S1-30	370	78	31	86	28	NS	20	22	NS
S1-31	14	29	17	29	25	NS	12	11	NS
S1-32	18	85	(49	73	40	NS	35	37	41
\$1-33 \$1.34	10	16	NS	567	NS	NS	NS	NS	NS
S1-34 S1-35	11	75 45	13	18	NS NS	NS	NS	NS	NS
S1-35	24 200	45	43 27	37 39	NS NS	NS NS	28 NS	NS NS	NS NS
S1-37	13	55	9	39 36	NS NS	NS NS	NS NS	NS NS	NS NS
S1-38	59	6	NS	22	NS	NS	NS	NS	NS NS
S1-39	290	22	11	17	NS	NS	10	12	NS
S1-40	150	33	15	17	18	NS	18	21	NS
S1-41	170	12	11	16	NS	NS	10	16	NS
S1-42	88	37	NS	22	NS	NS	NS	NS	NS
S1-43	4	NS	NS	14	NS	NS	NS	NS	NS
S1-44	280	44	21	28	NS	NS	9	19	NS
S1-45 S1-46	4,400	30	NS	24	NS	NS	10	32	NS
51-45 51-47	480 1,200	10 61	NS NS	24	10 NS	NS NS	4	11	NS NS
S1-48	1,200	31	NS NS	31 22	NS NS	NS NS	24 15	28 22	NS NS
S1-60	48	15	NS	17	NS	NS	8	14	NS NS
S1-61	NS	NS	758	366	152	NS	78	116	108
S1-62	NS	NS	125	27	18	NS	20	14	11
S1-63	NS	NS	264	241	150	NS	155	120	70
S1-64	NS	NS	512	66	55	NS	44	50	43
NS = Not	Sampled								

Table 4-9

History of TOC Concentrations at INT Production Wells

Nov-Dec 91 1994 1994 1994 1994 1994 1994 1995 1	HISTORY OF TOC CONCENTRATIONS AT INT PRODUCTION WELLS									
Nov-Dec 91 1994 1994 1994 1994 1994 1994 1995 1	Weil	Baseline	Mar	June	Sen	Now	Dec	lan	Fab	Man
(ppm)	ID I									
1-1 3,500 800 374 320 253 NS 204 270 273 1-3 5,200 1,188 1,260 339 281 214 NS 91 492 563 1-3 5,200 1,188 1,260 932 1,550 NS 1,016 940 624 1-4 610 1,300 541 430 NS NS 198 198 190 209 1-5 960 205 101 103 90 NS 76 70 45 1-6 280 510 200 195 100 NS 76 72 46 1-7 100 99 140 1011 38 NS 120 123 NS 1-8 800 142 77 70 NS NS 68 58 NS 1-9 800 142 77 70 NS NS 68 58 NS 1-9 800 142 77 70 NS NS 68 58 NS 1-10 1,900 112 62 82 135 NS 45 45 20 1-11 590 NS 44 113 31 NS 31 27 29 1-13 590 63 89 50 23 NS 32 16 31 1-14 24 112 NS 119 53 NS 39 50 54 1-15 19 20 19 47 18 NS 17 16 NS 1-16 2,000 15 11 68 9 NS 6 11 NS 1-17 7 13 NS 19 14 NS 8 11 NS 1-18 4 162 73 57 29 NS 24 20 31 1-18 4 162 73 57 29 NS 24 20 31 1-18 4 162 73 57 29 NS 24 20 31 1-19 1,400 55 36 38 39 NS 56 49 NS 1-19 1,400 55 36 38 39 NS 56 49 NS 1-19 1,400 55 36 38 39 NS 56 49 NS 1-19 1,400 55 36 38 39 NS 56 49 NS 1-19 1,400 55 36 38 39 NS 56 49 NS 1-19 1,400 55 36 38 39 NS 56 49 NS 1-19 1,400 55 36 38 39 NS 56 11 NS 1-19 1,400 55 36 38 39 NS 56 49 NS 1-19 1,400 55 36 36 38 NS NS 1,480 1,476		(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)		(ppm)	(ppm
T-3	INT-1				320	253	NS	204	270	273
Feb Feb	INT-2									563
T-6	INT-3									624
Feb 100 195 100 101	INT-4) :			1		209
T-7	INT-5								I .	ı
T-8	INT-7									
Fig. 800	INT-8									i .
100 1,900 112 62 82 135 NS 45 45 20 1-11 590 NS 44 113 31 NS 31 27 29 1-12 3,300 106 105 74 23 NS 32 16 31 1-13 590 63 89 50 23 NS 34 12 NS 1-14 24 112 NS 119 53 NS 19 50 54 1-15 19 20 19 47 18 NS 17 16 NS 1-16 2,000 15 11 68 9 NS 6 11 NS 1-17 7 13 NS 19 14 NS 8 14 NS 1-18 4 162 73 57 29 NS 24 20 31 1-19 1,400 55 36 38 39 NS 56 49 NS 1-20 3,500 2,525 1,922 1,182 NS NS 1,480 1,476 14,22 1-21 29 240 214 190 NS NS 204 132 540 1-22 8 55 44 95 NS NS 117 135 199 1-24 240 136 89 84 65 NS NS 117 135 199 1-25 36 65 24 29 NS NS 20 18 NS 1-26 120 152 38 122 123 NS 110 108 NS 1-27 180 116 85 79 80 NS 25 75 NS 1-28 630 48 34 37 23 NS 20 18 NS 1-30 1,400 30 16 24 22 11 NS NS 27 20 NS 1-30 1,400 30 16 24 22 17 NS NS 27 20 NS 1-30 1,400 30 16 24 22 11 NS NS 27 20 NS 1-31 70 52 25 82 30 NS 20 19 NS 1-33 120 255 47 20 17 NS 10 19 NS 1-55 NS 115 77 79 49 NS 27 20 NS 1-56 NS 15 115 98 122 61 NS 15 10 9 NS 1-57 NS 40 61 66 51 NS 65 NS 15 68 NS 1-58 NS 115 77 79 49 NS 132 120 NS 1-58 NS 115 77 79 49 NS 28 29 NS 1-58 NS 115 77 79 49 NS 28 29 NS 1-58 NS 115 77 79 49 NS 28 29 NS 1-58 NS 115 77 79 49 NS 29 20 NS 1-56 NS 115 113 120 94 NS 13 110 NS 1-56 NS 120 39 61 39 NS 20 11 18 NS 1-57 NS 40 61 66 51 NS 65 NS 1-58 NS 115 77 79 49 NS 15 0 42 NS 1-58 NS 115 77 79 49 NS 29 20 NS 1-58 NS 115 113 120 94 NS 94 85 NS 1-59 NS 115 113 120 94 NS 94 85 NS 1-59 NS 115 113 120 94 NS 94 85 NS 1-50 NS 120 39 61 39 NS 34 34 NS 1-50 NS 120 39 61 39 NS 34 34 NS 1-50 NS 120 39 61 39 NS 34 34 NS 1-50 NS 120 39 61 NS 65 NS 65 NS 1-50 NS 120 39 61 NS 65 NS 65 NS 1-50 NS 120 39 61 NS 131 17 NS 1-50 NS 120 39 61 NS 13 17 NS 1-50 NS 140 NS 15 NS 13 17 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 15 NS 15 NS 1-50 NS 15 NS 15 NS 15 NS 15 NS 15 NS 15 NS 15 NS 15 NS 15 NS 15 NS 15 NS	INT-9		-							
-11	INT-10									t
-12 3,300 106 105 74 23 NS 32 16 31 -13 550 63 89 50 23 NS 34 12 NS -14 24 112 NS 119 53 NS 39 50 54 -15 19 20 19 47 18 NS 17 16 NS -16 2,000 15 11 68 9 NS 6 11 NS -17 16 NS -17 17 7 13 NS 19 14 NS 8 14 NS -17 18 NS 17 16 NS -17 17 7 13 NS 19 14 NS 8 14 NS -17 19 14 NS 8 14 NS -17 19 14 NS 8 14 NS -17 19 14 NS 8 14 NS -18 19 14 NS 8 14 NS -19 15 NS 15 14 NS -19 15 NS 15 14 NS -19 15 NS 15 14 NS -19 15 NS 15 NS 14 NS -19 15 NS 15 NS 14 NS -19 15 NS 15 NS 15 NS 15 NS -17 15 NS NS -17 15 NS NS -17 15 NS NS -17 15 NS -17 15 NS NS -17	INT-11		_				1		1	
1-13 590 63 89 50 23 NS 34 12 NS 1-14 24 112 NS 119 53 NS 39 50 54 1-15 19 20 19 47 18 NS 17 16 NS 17 16 NS 17 17 18 NS 19 14 NS 8 14 NS 17 18 NS 19 14 NS 8 14 NS 18 14 NS 17 18 NS 19 14 NS 8 14 NS 17 18 NS 19 14 NS 8 14 NS 17 18 NS 19 14 NS 8 14 NS 17 18 NS 19 14 NS NS 15 19 18 18 18 19 19 14 NS NS 15 19 18 18 18 19 18 18 18	INT-12						1			
144	INT-13									
1-15	INT-14	1					ľ	_		
1-16	INT-15	19	20						•	ľ
1-17	INT-16	2,000	15	11	68	9				
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208	NT-207		56	52	45	60	NS	74	92	ı
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-215 NS NS 170 82 82 NS 56 67 NS -216 NS NS 22 34 28 NS 26 34 NS -217 NS NS 62 66 61 NS 60 62 NS NO Sampled ages	NT-213							•		1
-216 NS NS 22 34 28 NS 26 34 NS -217 NS NS 62 66 61 NS 60 62 NS NOt Sampled ages	NT-214									ł .
-217 NS NS 62 66 61 NS 60 62 NS Not Sampled ages	INT-215				1	I .			2	•
Not Sampled ages	NT-210				3					
ages			143	02	. 00	. 01	N2	. 80	02	NS
	verages									
784 565 484 387 439 NS 451 725 226	1	784	565	484	387	439	NS	451	336	226
	NT				•					263

Table 4-10

Dissolved Oxygen at Production Wells

Well		11/23/94	1/1/95	3/26/95
S1-1	2.1	0.8	1.6	NM
S1-2	1.7	1.6	1.1	NM
S1-3	1.8	1.0	1.1	NM
S1-4	2.0	0.8	0.9	NM
S1-5	NM	NM	1.6	NM
S1-6	1.6	NM	0.8	NM
S1-7	1.3	NM	1.2	NM
S1-8	1.1	0.7	0.8	NM
S1-9	8.0	NM	1.5	NM
S1-10	0.6	0.5	1.0	NM
S1-11	1.1	0.9	1.4	NM .
S1-12	1.1	1.3	1.5	NM [
S1-13	1.7	1.3	1.5	NM
S1-14	1.1	0.4	0.8	NM
S1-15	1.4	0.7	0.7	NM
S1-16	NM :	1.2	2.9	NM
S1-17	1.2	0.8	1.4	NM
S1-18	2.4	1.4	2.2	NM
S1-19	3.4	3.9	6.6	NM
S1-20	1.6	1.7	3.2	NM
S1-21	15+	15+	15+	NM
S1-22	1.5	0.7	1.6	NM
S1-23	1.9	1.5	4.8	NM
S1-24	0.9	2.6	1.8	NM
S1-25	0.8	0.8	1.4	NM
S1-26	2.2	0.7	1.1	NM
S1-27	1.4	1.9	2.0	NM
S1-28	1.2	1.2	1.7	NM
S1-29	1.9	2.2	4.4	NM
S1-30	1.5	1.1	4.2	NM
S1-31	1.8	1.6	1.2	NM
S1-32	1.4	1.5	1.6	0.6
S1-33	1.4	NM	NM	NM
S1-34	1.2	NM	NM	NM
S1-35	1.7	NM	1.5	NM
S1-36	0.9	NM	NM	NM
S1-37	1.3	NM	NM	NM
S1-38	15+	NM	NM	NM
\$1-39	1.3	2.9	3.2	NM
S1-40	2.2	1.0	2.0	NM
S1-41	1.0	1.0	1.4	NM
S1-42	14.0	NM	NM	NM
S1-43	2.2	NM	NM	NM
S1-44	1.8	6.0	1.8	NM
S1-45	2.9	2.3	5.1	NM
S1-46	13.5	15+	15+	NM
S1-47	9.6	8.7	5.4	NM
S1-48	5.3	4.2	5.0	NM
S1-60	6.1	4.4	5.6	NM
S1-61	1.1	0.8	1.2	0.8
S1-62	1.4	2.8	12.6	NM
S1-63	2.2	0.9	4.0	0.9
S1-64	2.4	1.8	4.1	0.9
		<u> </u>	7.1	

Table 4-10 (Continued)

Dissolved Oxygen at Production Wells

Well	9/1/94	11/23/94	1/1/95	3/26/95
INT-1	1.1	1.4	3.0	1.0
INT-2	1.5	8.0	8.0	0.4
INT-3	1.0	1.0	1.4	0.4
INT-4	0.9	1.1	1.2	0.5
INT-5	2.3	1.1	1.0	1.0
INT-6	0.7	1.3	1.4	1.0
INT-7	1.5	1.0	0.6	NM
INT-8	1.8	1.0	1.9	NM
INT-9	1.2	NM	1.4	NM
INT-10	1.9	1.4	1.7	0.8
INT-11	1.1	2.2	3.4	3.3
INT-12	2.2	13.8	13.8	15+
INT-13	0.9	7.8	1.6	NM
INT-14	1.8	1.7	1.7	0.7
INT-15	1.4	1.6	2.0	NM
INT-16	2.1	3.0	1.8	NM
INT-17	2.9	2.2	2.6	NM
INT-18	1.8	1.2	1.5	NM
INT-19	2.4	1.4		NM NM
INT-20	1.3	0.9	1.1	0.5
INT-21	1.7		1.2	
INT-22	0.8	2.6	3.0	0.6
INT-23	1.1	1.0	1.1	0.6
INT-24		2.4	2.3	NM
INT-25	1.8	2.0	2.6	NM
1	12.5	15+	10.2	NM
INT-26	1.4	1.6	2.3	NM
INT-27	1.6	1.2	1.4	NM
INT-28	5.2	7.4	4.6	NM
INT-29	5.2	4.0	4.4	NM
INT-30	9.5	9.4	1.8	NM
INT-31	1.4	4.1	5.3	NM
INT-32	15+	15+	15+	NM
INT-33	2.5	1.9	2.5	NM
INT-55	3.4	2.0	2.2	NM
INT-56	1.2	1.5	1.6	NM
INT-57	6.2	2.8	3.1	NM
INT-58	1.9	1.9	1.6	NM
INT-59	2.2	2.4	3.0	NM
INT-60	1.8	1.9	2.4	NM
INT-61	2.7	1.5	2.6	NM
INT-62	1.0	2.1	2.6	NM
INT-65	2.1	1.0	1.2	NM
INT-66	2.2	1.0	3.1	NM
INT-205	1.8	1.8	2.8	NM
INT-206	1.1	2.4	1.2	NM
INT-207	4.6	1.0	1.2	NM
INT-208	1.3	3.4	11.8	NM
INT-209	2.8	15+	14.8	NM
INT-210	15+	15+	15+	NM
INT-211	1.9	2.0	2.0	NM
INT-212	1.6	2.2	1.8	NM
INT-213	1.2	1.2	2.0	NM
INT-214	3.8	4.6	2.8	NM
	<u> </u>	<u> </u>		14141

French Ltd. Project

FLTG, Incorporated

Table 4-10 (Continued)

Dissolved Oxygen at Production Wells

Well	9/1/94	11/23/94	1/1/95	3/26/95
INT-215	5.2	3.6	3.0	NM
INT-216	3.4	4.2	2.7	NM
INT-217	1.6	1.2	1.8	NM

Table 4-11

Dissolved Oxygen at Monitoring Wells

	3/4/94	6/1/94	9/2/94	12/15/94	2/7/95	3/25/95
ERT-1	1.0	0.8	0.2	1.2	NM	NM
ERT-3	1.0	1.0	0.2	1.8	NM	NM
ERT-7	1.0	8.0	0.2	NM	NM	NM
ERT-8	1.0	0.6	0.2	2.2	NM	NM
ERT-9	1.0	1.3	0.4	NM	NM	NM
ERT-23	1.8	8.0	NM	0.7	NM	NM
ERT-24	0.8	NM	NM	2.0	MM	NM
ERT-25	1.8	1.0	NM	1.6	NM	NM
ERT-26	8.0	NM	NM	2.3	NM	NM
ERT-27	1.9	NM	NM	NM	NM	NM
ERT-28	6.4	NM	NM	4.8	NM	NM
ERT-29	1.2	NM	NM	NM	NM	NM
ERT-30	7.5	NM	NM	NM	NM	NM
ERT-33	1.1	0.4	NM	1.1	NM	NM
ERT-34	0.9	0.6	NM	NM	NM	NM
FLTG-1	0.8	0.3	NM	3.6	NM	NM
FLTG-2	1.0	1.2	NM	NM	NM	NM
FLTG-3	1.3	8.0	NM	NM	NM	NM
FLTG-4	1.0	0.6	NM	NM	NM	NM
FLTG-5	8.0	0.4	NM	3.0	NM	NM
FLTG-6	1.2	1.6	NM	NM	NM	NM
FLTG-7	1.6	0.6	0.8	2.0	0.4	0.2
FLTG-8	1.7	8.0	0.4	2.5	0.4	NM
FLTG-9	1.2	11.4	15+	NM	15+	NM
FLTG-10	1.1	2.2	2.6	3.2	1.2	NM
FLTG-11	0.6	0.6	0.5	NM	NM	NM
FLTG-12	8.0	1.8	0.6	NM	NM	NM
FLTG-13	0.3	0.8	0.4	2.6	1.3	NM
FLTG-14	0.6	8.0	0.4	2.4	0.2	NM
FLTG-15	8.0	1.2	NM	2.4	NM	NM
INT-59-P1	1.6	0.5	0.6	NM	1.2	NM
INT-59-P4	1.4	0.9	0.6	NM	0.6	NM
INT-60-P1	1.7	1.0	0.4	NM	0.2	NM
INT-60-P4	1.4	0.8	0.4	NM	0.5	NM
INT-101	1.0	0.4	0.2	2.6	0.3	0.2
INT-102	0.6	0.6	NM	15.0	15+	14.9
INT-103	2.2	0.7	0.1	1.3	0.2	NM
INT-104	2.3	4.8	0.3	4.6	3.2	NM
INT-105	1.2	0.7	0.4	4.6	0.4	NM

Table 4-11 (Continued)

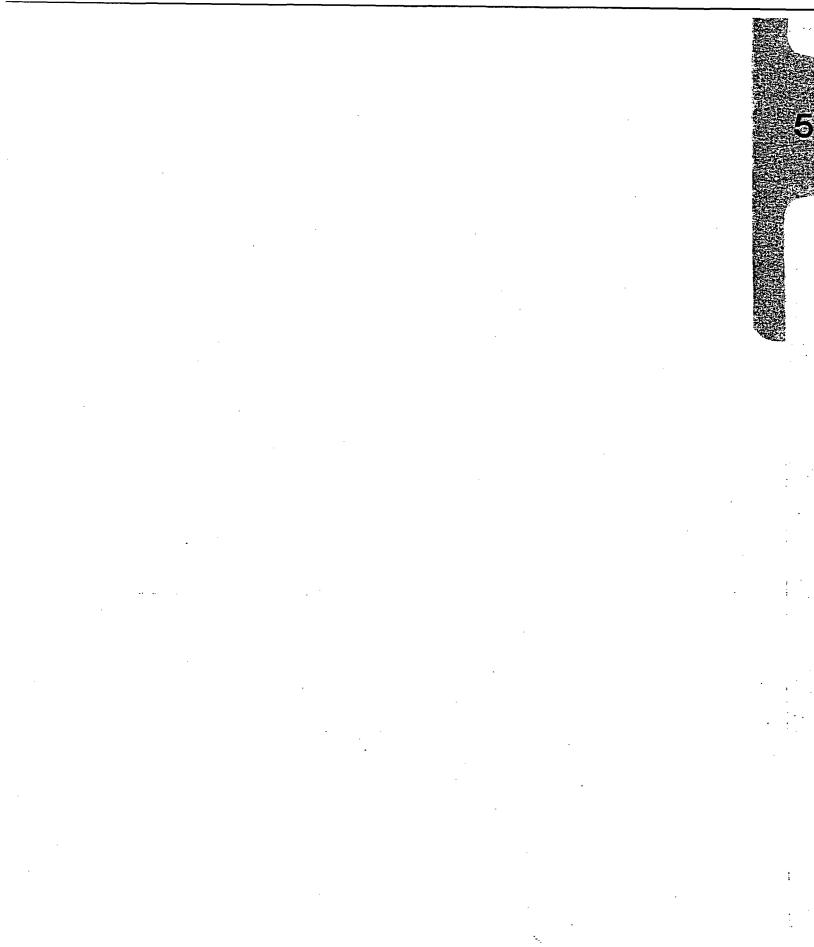
Dissolved Oxygen at Monitoring Wells

	3/4/94	6/1/94	9/2/94	12/15/94	2/7/95	3/25/95
INT-106	15+	15+	15+	15.0	4.7	NM
INT-107	15+	15+	15+	15.0	15+	NM
INT-108	1.1	0.2	0.2	2.1	1.7	0.2
INT-109	1.6	8.0	0.5	2.2	0.2	NM
INT-110	1.6	0.9	0.8	0.8	0.4	NM
INT-111	1.2	1.4	2.0	2.8	1.4	NM
INT-112	15+	15+	15+	15.0	15+	15+
INT-113	0.9	15+	15+	10.3	2.0	NM
INT-114	1.6	8.0	0.4	1.5	0.2	NM
INT-115	1.2	1.0	8.0	4.6	0.7	NM
INT-116	2.4	3.8	NM	2.4	NM	NM
INT-117	2.7	2.8	NM	3.1	NM	NM
INT-118	4.8	2.2	NM	2.0	NM	NM
INT-119	1.1	0.7	1.1	1.1	0.3	NM
INT-132	2.0	1.8	0.4	3.6	0.7	NM
INT-133	8.0	1.2	0.5	1.9	0.6	NM
INT-134	0.6	0.6	0.6	1.8	0.6	NM
INT-135	0.6	8.0	0.6	6.8	0.7	0.2
INT-137	1.0	1.8	8.0	3.1	2.4	NM
INT-138	8.0	0.8	0.4	2.3	0.6	NM
INT-139	0.6	8.0	0.9	1.1	0.5	NM
P-5	1.0	0.4	0.1	0.6	0.2	NM
P-6	1.0	0.6	0.3	NM	NM	NM
REI-10-2	1.2	8.0	0.4	1.1	0.2	NM
REI-10-3	0.6	8.0	0.3	8.0	0.3	NM
REI-12-2	8.0	2.0	NM	2.4	NM	NM
S1-101	1.1	8.0	0.2	0.8	0.2	NM
S1-102	1.6	0.6	0.4	0.5	0.2	0.3
S1-103	0.8	6.6	2.3	1.2	0.2	NM
S1-104	1.6	0.8	1.8	3.9	15+	NM
S1-105	15+	15+	0.2	1.4	6.8	NM
S1-106	8.0	0.8	0.4	0.6	0.1	0.2
S1-107	5.4	15+	15+	15.0	15+	NM
S1-108	1.6	0.0	0.6	15.0	15+	NM
S1-109	8.4	15+	15+	5.2	15+	NM
S1-110	1.3	1.4	0.6	0.6	0.2	NM
S1-111	2.0	8.0	15+	15.0	15+	NM
S1-112	0.6	1.4	0.7	2.4	0.2	NM
S1-113	1.8	0.8	0.4	2.7	0.5	0.3

Table 4-11 (Continued)

Dissolved Oxygen at Monitoring Wells

	3/4/94	6/1/94	9/2/94	12/15/94	2/7/95	3/25/95
S1-114	8.0	1.2	0.4	1.5	0.4	NM
S1-115	1.8	1.6	NM	3.2	NM	NM
S1-116	8.0	0.7	NM	2.1	NM	NM
S1-117	2.0	2.3	NM	2.9	NM	NM
S1-118	1.6	0.6	NM	3.4	NM	NM
S1-135	1.2	1.3	0.2	0.8	NM	NM
S1-137	1.0	1.0	8.0	1.0	NM	NM
S1-50-P1	15+	1.7	15+	NM	NM	NM
S1-50-P3	15+	15+	11.6	NM	1.6	NM
S1-51-P1	1.0	1.3	15+	NM	NM	NM
S1-51-P3	1.5	0.8	0.6	NM	0.3	NM
S2-101	NM	NM	NM	3.8	NM	NM
SG-1	NM	NM	NM	NM	NM	NM
SG-2	NM	NM	NM	NM	NM	NM
SG-3	NM	NM	NM	NM	NM	NM
SG-4	NM	NM	NM	NM	NM	NM
SG-5	NM	NM	NM	NM	NM	NM
W-3	1.1	0.2	0.5	1.8	0.2	NM
W-4	1.4	0.4	0.5	NM	NM	NM
W-5	1.6	0.2	0.4	NM	NM	NM
W-7	8.0	1.0	0.3	2.6_	NM	NM



5.0 GROUNDWATER TREATMENT PLANT

5.1 Summary of Activities

Operation concentrated on reducing the total pounds of chlorinated hydrocarbons discharged to the river. The efforts were successful as evidenced by the treated water summary in Table 5-2, as the last available results reveal 166 ppb average by the end of the reporting period.

Sludge volumes have returned to optimum operating parameters and there have been no total suspended solids excursion in this period.

There have been no carbon transfers since December 14, 1994, as the TOC levels still remain low and influent flow rates have leveled off at approximately 110 gal/min.

There have been no major mechanical repairs in March.

Total flows for March, 1995:

Water discharged to the San Jacinto River - 5,091,700 gallons

Water discharged to the Lagoon - 0

Sludge discharged to the Lagoon - 6,700 gallons

Water processed through the GWT - 4,812,400 gallons

Water discharged to the South Pond - 0

Water blended passed Carbon Filter - 4,094,000 gallons

Water processed from Cell D to GWT plant: metered - 0

Cell D injection at S1-1 through S1-9: metered - 124,700 gallons

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5.2 Inoculum/Nutrient Addition

The following have been introduced into the bioreactors/clarifier:

Nutrients:

330 gallons Diammonium Phosphate

Microbes:

24 oz. French Limited Isolated Microbes

Coagulant:

~ 6.0 gallons Percol 778 Cationic Polymer

5.3 Maintenance

Table 5-1 lists the preventive maintenance items performed in March.

5.4 Operating Data

GWT.03

Table 5-2 summarizes the laboratory analysis of the treated water discharged to the San Jacinto River.

TABLE 5-1

Preventive Maintenance

Day	Action
March 6-7	Completed safety inspection of all electrical tools, extension cords, and all electrical office equipment.
March 9	Lubed pumps in GWT area.
March 10	Lubed rollers at the west gate.
March 14	Dewatered slab at GWT plant.
March 23	Checked belt tension and lubed blowers 1 & 3.
March 24	Lubed all valves in GWT plant.
March 28	Checked belt tension and lubed blower #2.
March 31	Exercised all valves in GWT. Lubed all "red" valves. Lubed electrical gate and chemical storage gate.

TABLE 5-2
Treated Water Results Summary

		г <u>ы</u>	- 1	T	58	s Toc		O&G		Benzene		Chik	n HC,e	Total PCBs		Nepti	helene
Collected	Set No.	16			PM	55 (PPM	15 F	PPM	150	PPB	50	O PPB	0.6	5 PPB	300	PPB
	96 (110.	Daily	R-Ava	Daily	R-Avg	Daily	R-Avg	Deily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg
1-Dec-94	M03A0287	7.4		1.		34.8		2.5		6.		526.		.16		5.	}
5-Dec-94	MOJAOZBB	7.57		1.		28.5		2.5		6.		305.		.16		5 .	l l
8-Dec-94	M03A0289	7.52	1	1.		40.6		2.5		6.		480.		.16		5.	- 1
12-Dec-94	MOJAOZ9O	7.43		4.		33.		2.5		6.		342.		.16		5.	
15-Dec-94	MO3A0291	8.13		.5		23.		2.5		6.		145.		.16		5.	
19-Dec-94	M03A0292	7.96		1.		29.3		2.5		2.5		75.		.16		5.	ļ
22-Dec-94	E620VEOW	7.91		4.		17.8		2.5		2.5		170.		.16		5.	
26-Dec-94	M03A0284	7.68		10.		41.8		2.5		6.		353.		.16		5.	_
29-Dec-94	MO3A0295	7.79	7.7	1.	2.6	15.4	29.4	2.5	2.5	2.5	4.8	205.	289	.16	.16	5. 5.	5. 5.
2-Jen-95	M03A0296	7.78	7.8	4.	2.9	12.9	26.9	2.5	2.5	5.	4.7	275.	261	.16	.16	5. 5.	5. 5.
5-Jen-95	M03A0297	7.81	7.8	5.	3.4	19.	25.9	2.5	2.5	6.	4.7	249.	255	.16	.16	5. 5.	5.
9-Jan-95	PESOAEOM	7.8	7.8	7.	4.1	9.8	22.4	2.5	2.5	2.5	4.3	124.	215	.16 .16	.16 .16	5. 5.	5.
12-Jen-95	MOJAO299	7.77	7.8	2.	3.8	9.8	19.9	2.5	2.5	2.5	3.9	200.	200 227	.16	.16	5. 5.	5.
16-Jen-95	M03A0300	7.61	7.8	4.	4.2	18.3	19.3	2.5	2.5	6.	3.9	393.	269	.16	.16	5. 5.	5.
19-Jan-95	MO3AOJ01	7.44	7.7	2.	4.3	19.8	18.3	2.5	2.5	5.	4.2	454.	209 272	.16	.16	5.	5. 5.
23-Jan-95	M03A0302	7.82	7.7	9.	4.9	35.5	20.3	2.5	2.5	6.	4.6 4.6	192. 234.	258	.16	.16	5.	5.
26-Jan-95	M03A0303	7.66	7.7	.5	3.8	20.5	17.9	2.5	2.5	6.	7.1	2326.	494	.16	.16	5.	5.
30-Jan-95	MO3A0304	7.15	7.6	4.	4.2	44.3	21.1	2.5	2.5	25.	7.1	613.	532	.16	.16	5. 5.	5.
2-F+b-95	MOJAD305	7.28	7.6	.5	3.8	11.7	21.	2.5 2.5	2.5 2.5	6. 5.	7.1	411.	550	.16	.16	5.	5.
6-Feb-95	M03A0306	7.55	7.6	1,	3.3	11.7	20.2	2.5	2.5	5. 5.	7.4	226.	561	.16	.16	5.	5.
9-Feb-95	M03A0307	7.52	7.5	5.	3.1	8.8 9.7	20. 20.	2.5	2.5	5. 5.	7.7	349.	578	.16	.16	5.	5.
13-Feb-85	MOJAOJO8	7.5	7.5	22.	5.3	5.2	20. 18.6	2.5	2.5	5. 5.	7.6	276.	565	.16	.16	5.	5.
16-Feb-95	M03A0309	7.33	7.5	.5	4.9 5.4	5.8	17.	2.5	2.5	4.	7.4	193.	536	.16	.16	5.	5.
20-Feb-95	M03A0310	7.37	7.5 7.4	6. 1.	4.5	1.	13.2	2.5	2.5	2.5	7.1	60.	521	.16	.16	5.	5.
23-Feb-95	M03A0311 . M03A0312	7.29	7.4	3.	4.8	9.5	12.	2.5	2.5	2.5	6.7	164.	513	.16	.16	5.	5.
27-Feb-95 2-Mer-95	M03A0312	7.47	7.4	.5	4.4	8.5	8.	2.5	2.5	2.5	4.2	145.	271	.16	.16	5.	5.
2-Mer-95	M03A0313	7.49	7.4	1.	4.4	8.1	7.6	2.5	2.5	2.5	3.8	128.	217	.16	.16	5.	5.
9-Mar-95	M03A0315	7.38	7.4	1.	4.4	8.	7.2	2.5	2.5	2.5	3.5	193.	193	.16	.16	5.	5.
13-Mar-95	M03A0316	7.84	7.4	5.	4.4	7.2	7.	2.5	2.5	2.5	3.22	111.	180	.16	.16	5.	5.
15-Mar-95	M03A0316	7.55	7.4	.5	2.1	6.	6.6	2.5	2.5	2.5	2.9	150.	158	.16	.16	5.	5.
20-Mar-95	M03A0316	7.41	7. 5	.5	2.1	6.6	6.7	2.5	2.5	2.5	2.7	97.	138	.16	.16	5.	5 .
20-Mer-95	M03A0318	7.45	7.5	l ï.	1.5	6.	6.8	2.5	2.5	2.5	2.5	185.	137.	.16	.16	5.	5.
27-Mer-95	M03A0320	7.83	7.5	3.	1.7	12.2	8.	2.5	2.5	6.	2.89	325.	166	.16	.16	5.	5
30-Mer-95	M03A0321	7.47	7.5	 													
24.W.M.23	MUSHUSE	1 ".7"	7.0	I													

Discharge sample of 17-Oct destroyed in flood.

M03A0322 7.42

Chlorinated hydrocarbone value is sum of detected concentrations of 21 voletile chlorinated hydrocarbons on target compound list.

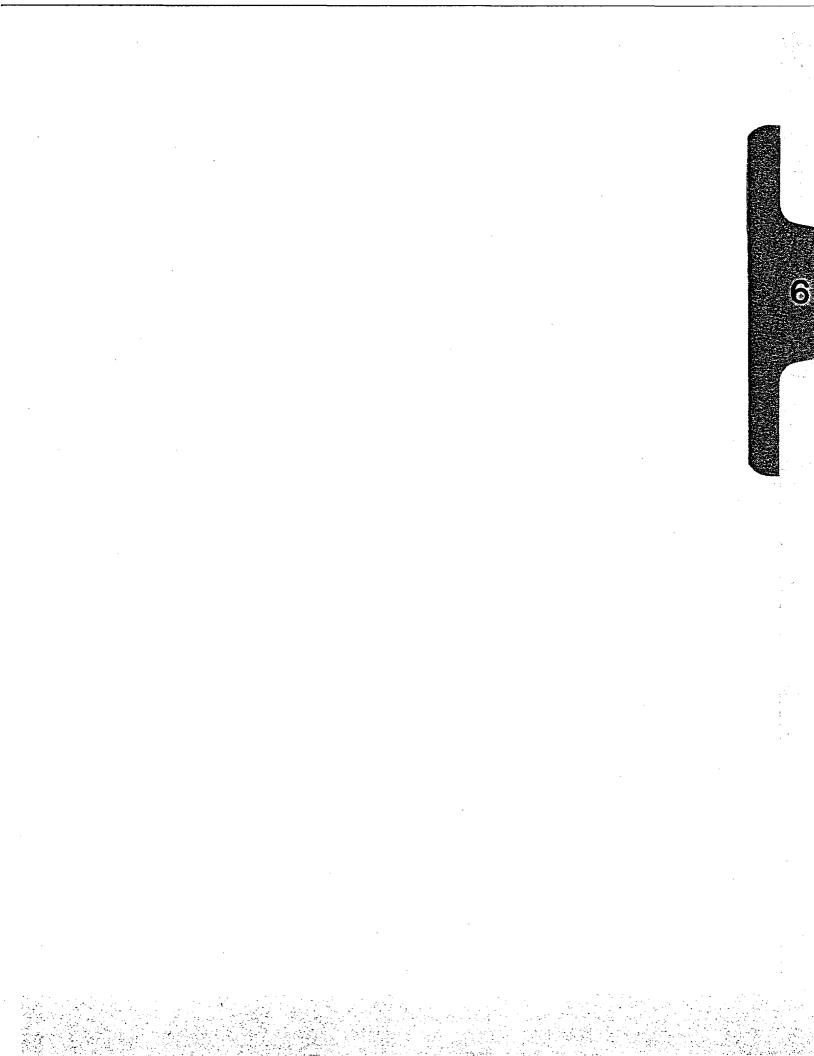
French Ltd. Project FLTG, Incorporated

TABLE 5-2 (Continued) Treated Water Results Summary

									ı rea	tou i	VACC	110	Juita	Ou.		. 1									
			Ao		34		id .		Cir		Cu	P	ь	_	An		Hg		M		3.0		\ g		2n
Collected	Set No.		PPB		PPB	50	PPB	500	PPB	15	PPB	66	PPB	300	PPB	1	PPB	148	PPB	20	PPB	5	PPB		PPB
		Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg	Daily	R-Avg
1-Dec-94	M03A0287	11.		109.		.1		.5		1.		.5		7.		.1		10.		1.3		.5		4.	1
5-Dec-94	M03A0288	12.		121.		1.		1.		3.		1.		19.		.1		.9		1.3		.5		9.	
8-Dec-94	M03A0289	14.		128.		.1		1.		.3		.5		3.		1.1		10,		1.3		.2		3.8	- 1
12-Dec-94	M03A0290	7.		154.		.,		7.		4.		.5	- 1	9.		.1		13.		1.3		.2		5.	- 1
15-Dec-94	M03A0291	49.		92.		.1		2.		.7		.5		3.		.1		1.	1	5.		.2		5.	- 1
19-Dec-94	M03A0292	16.		93.		[.1		1.		1.		.5	l	3.		1		2.		1.		.2		4.	l
22-Dec-94	M03A0293	17.		130.		.1		.2		1.4		.5		2.		.1		2.		1.3		.2		1.5	ı
26-Dec-94	M03A0294	11.		151.		-1		.2	_	1.8		.5	1	9.		1		4.		1.3	1	.2		6.	
29-Dec-95	M03A0295	18.	17.2	114.	121	.2	.1	3.	1.5	1.	1.6	.5	.6	4.	6.6	.]	.1	3.	5.1	5.	2.1	.2	.2	4.	4.7
2-Jan-95	M03A0296	9.9	17.1	172.	128	.1	.1	2.1	1.7	1.6	1.6	.5	.6	18.	7.8	-]	.1	1.	4.1	1.2	2.	.2	.2	7.	5.
5-Jan-95	M03A0297	14.	17.3	151.	132	-1	.1	3.	1.9	2.	1.5	.5	.5	57.	12.		.1	6.	4.7	1.2	2.	.2	.2	20.	6.3
9-Jan-95	M03A0296	12.	17.1	171.	136	[.1	.1	.9	1.9	3.	1.8	.5	.5	23.	14.2	-!	.1	4.	4.	1.3	2.	.2	.2	7.	6.6
12-Jan-95	M03A0299	16,	18.1	143.	135	-1	-!	.z	1.2	2.	1.6	.5	.5	2.	13.4	.1	.1	2.	2.8	1.3	2.	.2	.2	3.	6.4
16-Jan-95	M03A0300	12.	14.	146.	141	.1	-,1	.5	1.	3.	1.9	.5	.5	1.	13.2	.1	.1	3.	3.	1.3	1.6	.2	.2	6.	6.5
19-Jan-95	M03A0301	18.	14.2	135.	146	.1	-1	.4	.9	2.	2.	.5	.5	2.	13.1	-!	.1	4.	3.2	1.3	1.7	.2	.2	18.	8.1
23-Jan-95	M03A0302	12.	13.7	140.	147	.1	-1	.2	.9	2.	2.	.5	.5	3.	13.2	.1	.1	6.	3.7	1.3	1.7	.2	.2	16.	9.7
26-Jan-95	M03A0303	16.	14.2	148.	147	.1	.1	.2	.9	2.	2.1	.5	.5 .5	2.	12.4	.1	.1	2. 3.	3.4	1.3	1.2	.2	.2	12. 5.	10.3
30-Jan-95 2-Feb-95	M03A0304	9.	13.2 13.2	238.	160	.1	.1	.2	.8	2.	2.2	.5	.5	43. 15.	16.8	.1	.1	4.	3.4	1.3 1.3	1.2	.2	.2		10.4
6-Feb-95	M03A0305	10.		192.	163	.1	-1	1.	.7	2.	2.2 2.1	.5	.5	4.	16.4	.1	.1	2.	3.3	1.3	1.3	.2	.2	8. 5.	8.9
9-Feb-95	M03A0307	11.	12.9 13.3	188. 195.	167 169	.1	-!	.2 .2	.4	١.	2.2	.5 .5	.5	6.	8.7	.,	.1	6.	3.6	1.3	1.3	.2 .2	.2	11.	9.3
13-Feb-95	M03A0307	16. 13.	13.	184.	174	.1	.1	2.	.s	4.	2.1	.s .5	.5	15.	10.1	''	.1	5.	3.9	1.3	1.3	.2 .2	.2	8.	9.9
16-Feb-95	M03A0309	12.	13.	184.	178	.1	_;]	.2	.5	1.	1.9	.5	.5	6.	10.7	.1	.,	6.	4.2	1.3	1.3	.2	.2	7.	10.
20-Feb-95	M03A0310	14.	12.6	191.	184		1	2.	.,	2.	1.9	.5	.5	27.	13.4	.1	.,	8.	4.7	1.3	1.3	.3	.2	6.	8.7
23-Feb-95	M03A0311	13.	12.7	165.	187	.1	.,	1.		2.	1.9	.5	.5	3.	13.4	.1	.i	8.	4.9	1.3	1.3	.2	.2	9.	7.9
27-Feb-95	M03A0312	22.	13.3	144.	187	.1	.1	4.5	1.2	3.	2.	.5	.5	3.	13.6	.1	-:-	12.	6.	1.3	1.3	.5	.2	2.5	6.8
2-Mar-95	MO3A0313	23.	14.9	133.	175	.1	,	2.	1.4	1.	1.9	.5	.5	15.	10.4	.1	.1	8,	6.6	1.3	1.3	.5	.2	6.	6.9
6-Mar-95	M03A0314	17.	15.7	130.	168	1.	.2	1.	1.4	3.	2.	2.2	.7	3.	9.1	.1	.1	2.5	6.4	.5	1.2	.8	.3	8.	6.9
9-Mar-95	M03A0315	24.	17.1	111.	160	.1	.2	.2	1.4	.8	2.	.5	.7	4.	9.1	.1	.1	4.	6.6	1.3	1.2	.2	.3	6.	7.1
13-Mar-95	M03A0316	17.	17.2	121.	151	.1	.2	.2	1.4	١.	1.6	.5	.7	41.	13.	.1	.1	3.	6.3	1.3	1.2	.2	.3	5.	6.4
16-Mar-95	M03A0317	23.	18.3	114.	144	.1	.2	.3	1.3	3.	1.9	.5	.7	2.	11.6	.1	.1	3.	6.1	1.3	1.2	.2	.3	11.	6.7
20-Mer-95	M03A0318	18.	19.	112.	136	.1	.2	.2	1.3	3.	2.1	.5	.7	2.	11.1	.1	.1	2.	5.6	1.3	1.2	.2	.з	3.	6.3
23-Mar-95	M03A0319	19.	19.6	119.	128	.1	.2	.2	1.	2.	2.1	.5	.7	2.	8.3	.1	.1	3.	5.1	1.3	1.2	.2	.3	4.	6.1
27-Mar-95	M03A0320	14.	19.7	130.	124	.1	.2	3.	1.3	2.	2.1	.5	.7	22.	10.4	.1_	_1_	5.	4.7	1.3	1.2	.2	.3	40.	9.5

Discharge sample of 17-Oct destroyed in flood.

Motals values in PPS



6.0 AMBIENT AIR MANAGEMENT

Ambient air quality management continued on an "as-needed" basis to protect the environment, human health, and site workers.

6.1 Summary of Activities

Collected and analyzed three time-integrated personnel exposure samples; the measured levels of volatile organic compounds were well below the action levels.

Sampled the ambient air in all work areas several times per shift and on a random "spotcheck" basis; there were no levels of volatile organic compounds which required response action. Sampled ambient air in special work areas where burning and/or welding was planned. Sampled ambient air continuously in areas where exposure could occur and where confined space work occurred.

6.2 Problems and Response Action

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Response Action

Calibrate portable vapor meters.

Train operators to calibrate; refurbish all

meters.

Sampling "hot" wells.

Require respirator use when sampling "hot"

wells.

Ambient air quality in all work areas.

Check all work areas with portable meter

several times per day.

H₂S levels in some well vaults.

Vent vault and purge with air before

working in the vaults.

MONTHLY PROGRESS REPORT Ambient Air Management

French Ltd. Project FLTG, Incorporated

6.3 Problems Resolved

None.

6.4 On-going Events/Activities

Measure ambient air quality in all work areas several times per day.

Conduct periodic time-integrated sampling in all major work areas.

Require respiratory protection when sampling "hot" wells.

Conduct necessary air sampling and analyses to issue "burn" permits.

Closely monitor ambient air quality in the vicinity of new projects/activities.

Conduct respirator fit tests on all employees.

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7.0 QUALITY ASSURANCE/QUALITY CONTROL

7.1 Summary of Activities

7.1.1 Sampling

One set of personal air monitoring samples were collected in March. The following is a summary of current routine and special air matrix code sample specifics:

MATRIX CODE

SAMPLE SPECIFICS

MO1D

TF at three locations

TF = Tenax® front tube

Table 7-1 is a summary of the air, soil and water samples collected for the month of March. Table 7-2 is a summary of Scheduled Sampling Events for the month of March.

7.1.2 Data Validation Activities Summary

7.1.2.1 Treated Water Samples

Data validation was completed for sample sets M03A0306, M03A0307, M03A0308, M03A0309, M03A0310, M03A0311, M03A0312, M03A0313, M03A0314 and M03A0315. These samples were collected between February 6, 1995 and March 9, 1995. QC failures are summarized in Table 7-3. Completeness values are summarized in Tables 7-4 through 7-8.

7.1.2.2 Groundwater Samples

Level I data validation was completed for sample sets collected during the 1994 annual groundwater sampling event. QC failure summaries for this sampling event are reported in Tables 7-9 through 7-13.

7.1.2.3 Other Samples

All other special sample sets were validated manually this period.

MONTHLY PROGRESS REPORT Quality Assurance/Quality Control

French Ltd. Project

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7.2 Data Validation QC Summary and Discussion

7.2.1 Level I and Level II QC Philosophy

The Quality Assurance Project Plan (QAPP) defines data validity in terms of procedural requirements which must be followed for data comparability, and numerical data quality objectives which must be met to assure precision and accuracy of the results. Precision, accuracy and completeness are the numerical Data Quality Objectives (DQOs) established for the French Project by the QAPP. The intent of the data validation process is to verify that the documentation and quality control data provided by the laboratory properly substantiate the required data quality.

For purposes of data validation procedures, the QAPP defines two QC levels: Level I and Level II. Level I data validation is specified for process control and progress monitoring sample data validation and Level II data validation is specified for remediation verification sample results and treated water discharge sample results.

TABLE 7-1 Samples Collected - March, 1995

Sample No.	Description	Location	Date Samp'd	Lab Rec'd	Data Rec'd	Lab_
M01D005401	Personal air monitoring	WTP Operator	3/08	3/09	Υ	Α
M01D005402	Personal air monitoring	Well Maint.	3/08	3/09	Y	A
M01D005403	Personal air monitoring	Security	3/08	3/09	Y	A
M03A031301	Treated water discharge	CF Out	3/02	3/03	Y	A
M03A031401	Treated water discharge	CF Out	3/06	3/07	Y	A
M03A031501	Treated water discharge	CF Out	3/09	3/10	Y	A
M03A031601	Treated water discharge	CF Out	3/13	3/14	Y	A
M03A031701	Treated water discharge	CF Out	3/16	3/17	N	A
M03A031801	Treated water discharge	CF Out	3/20	3/21	N	A
M03A031901	Treated water discharge	CF Out	3/23	3/24	N	A
M03A032001	Treated water discharge	CF Out	3/27	3/28	N	A
M03A032101	Treated water discharge	CF Out	3/30	3/31	N	A
M04A002801	Groundwater remediation progress	ERT-022	3/07	3/09	Y	A
M04A002802	Groundwater remediation progress	INT-101	3/07	3/09	Y	A

Labs:

A = American Analytical and Technical Services
 N = North Water District Lab
 K = Chester LabNet-Houston

TABLE 7-1 Samples Collected - March, 1995

Sample No.	Description	Location	Date Samp'd	Lab Rec'd	Data Rec'd	Lab
M04A002901	Groundwater remediation progress	INT-115	3/10	3/11	N	A
M04A002902	Groundwater remediation progress	INT-111	3/10	3/11	N	A
M04A002903	Groundwater remediation progress	S1-114	3/10	3/11	N	A
M04A002904	Groundwater remediation progress	S1-107	3/10	3/11	N	A
M04A002905	Groundwater remediation progress	S1-109	3/10	3/11	N	A
M04A002906	Groundwater remediation progress	INT-110	3/10	3/11	N	A
M04A003001	Groundwater remediation progress	S1-132	3/11	3/12	N	A
M04A003002	Groundwater remediation progress	INT-104	3/11	3/12	N	A
M04A003004	Groundwater remediation progress	INT-112	3/11	3/12	N	A
M04A003005	Groundwater remediation progress	S1-127	3/11	3/12	N	A
M04A003006	Groundwater remediation progress	FLTG-007	3/11	3/12	N	A
M04A003007	Groundwater remediation progress	INT-106	3/11	3/12	N	A
M04B002601	Groundwater remediation progress	INT-141	3/09	3/10	Y	A
M04B002602	Groundwater remediation progress	INT-144	3/09	3/10	Y	A
M04B002603	Groundwater remediation progress	S1-120	3/09	3/10	Y	A
M04B002604	Groundwater remediation progress	INT-119	3/09	3/10	Y	A
M04B002701	Groundwater remediation progress	S1-050-P-2	3/12	3/13	N	A

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Labs:

A = American Analytical and Technical Services
 N = North Water District Lab
 K = Chester LabNet-Houston

QAQC.03

TABLE 7-1 Samples Collected - March, 1995

Sample No.	Description	Location	Date Samp'd	Lab Rec'd	Data Rec'd	Lab
M04B002702	Groundwater remediation progress	S1-102	3/12	3/13	N	A
M04B002703	Groundwater remediation progress	S1-106	3/12	3/13	N	A
M04B002704	Groundwater remediation progress	S1-113	3/12	3/13	N	A
M04B002705	Groundwater remediation progress	REI-10-3	3/12	3/13	N	A
M04B002801	Groundwater remediation progress	REI-10-2	3/13	3/13	N	A
M04B002802	Groundwater remediation progress	S1-123	3/13	3/13	N	A
M04B002803	Groundwater remediation progress	INT-123	3/13	3/13	N	A
M04B002804	Groundwater remediation progress	INT-127	3/13	3/13	N	A
M04C001801	Groundwater remediation progress	ERT-022	3/09	3/10	Y	A
M04C001802	Groundwater remediation progress	INT-101	3/09	3/10	Y	A
M04C001901	Groundwater remediation progress	INT-115	3/12	3/13	N	A
M04C001902	Groundwater remediation progress	S1-114	3/12	3/13	N	A
M04C001903	Groundwater remediation progress	S1-107	3/12	3/13	N	A
M04C001904	Groundwater remediation progress	S1-109	3/12	3/13	N	A
M04C001905	Groundwater remediation progress	INT-110	3/12	3/13	N	A
M04C001906	Groundwater remediation progress	INT-111	3/12	3/13	N	A
M04C001907	Groundwater remediation progress	FLTG-007	3/12	3/13	N	A

Labs: A = American Analytical and Technical Services
N = North Water District Lab
K = Chester LabNet-Houston

TABLE 7-1 Samples Collected - March, 1995

Sample No.	Description	Location	Date Samp'd	Lab Rec'd	Data <u>Rec'd</u>	Lab
M04C001908	Groundwater remediation progress	INT-106	3/12	3/13	N	Α
M04C001909	Groundwater remediation progress	INT-104	3/12	3/13	N	A
M04C002001	Groundwater remediation progress	INT-101	3/12	3/13	N	A
M04C002002	Groundwater remediation progress	INT-120	3/12	3/13	N	A
M04C002003	Groundwater remediation progress	INT-141	3/12	3/13	N	A
M04C002004	Groundwater remediation progress	INT-144	3/12	3/13	N	A
M04C002005	Groundwater remediation progress	S1-106	3/12	3/13	N	A
M04C002006	Groundwater remediation progress	ERT-022	3/12	3/13	N	A
M04C002007	Groundwater remediation progress	S1-132	3/12	3/13	N	A
M04C002008	Groundwater remediation progress	S1-127	3/12	3/13	N	A
M04C002009	Groundwater remediation progress	INT-112	3/12	3/13	N	A
M04C002010	Groundwater remediation progress	INT-119	3/12	3/13	N	A
M06C002501	Monthly process water	T-101 Eff	3/02	3/03	Y	A
M06C002502	Monthly process water	T-101 Inf	3/02	3/03	Y	Α
M06C002503	Monthly process water	R1	3/02	3/03	Y	A
M06C002504	Monthly process water	R2	3/02	3/03	Y	Α
M06C002505	Monthly process water	Cell D Liqr	3/02	3/03	Y	A
M08A002001	Potable water monitoring	Potable H2O	3/16	3/17	N	A
M08B000801	Potable water monitoring	Potable H2O	3/16	3/16	N	N

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Labs: A = American Analytical and Technical Services
N = North Water District Lab
K = Chester LabNet-Houston

QAQC.03

TABLE 7-1 Samples Collected - March, 1995

Sample No.	Description	Location	Date Samp'd	Lab Rec'd	Data Rec'd	Lab_
M08C001101	Riverdale wells monitoring	RD-3	3/14	3/13	N	N
M08D001401	Riverdale wells monitoring	RD-3	3/13	3/14	N	A
S14A009201	Misc. Groundwater	GRD RUNOFF	3/01	3/02	Y	A
S14K001401	Groundwater remediation progress	S1-063	3/01	3/02	Y	A
S14K001402	Groundwater remediation progress	S1-127	3/01	3/02	Y	A
S14K001403	Groundwater remediation progress	S1-128	3/01	3/02	Y	A
S14K001404	Groundwater remediation progress	S1-132	3/01	3/02	Y	A
S14K001405	Groundwater remediation progress	S1-133	3/01	3/02	Υ,	A
S14K001406	Groundwater remediation progress	S1-134	3/01	3/02	Y	Α .
S14K001501	Groundwater remediation progress	INT-228	3/01	3/02	Y	A
S14L002601	Groundwater remediation progress	INT-226	3/03	3/04	Y	A
S14L002602	Groundwater remediation progress	INT-227	3/03	3/04	Y	A
S16A000801	Misc. process water	CLARIFER	3/01	3/02	Y	A
S16B003101	San Jacinto river metals	San Jac Upst	3/15	3/17	N	A

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Labs:

A = American Analytical and Technical Services
 N = North Water District Lab
 K = Chester LabNet-Houston

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TABLE 7-2
Scheduled Sampling Events
March, 1995

Date Sampled	Set Number	Description	Schedule
3/07/95	M04A0028	Groundwater progress moni	Monthly
3/10/95	M04A0029	Groundwater progress moni	Monthly
3/11/95	M04A0030	Groundwater progress moni	Monthly
3/09/95	M04B0026	Groundwater progress moni	Monthly
3/12/95	M04B0027	Groundwater progress moni	Monthly
3/13/95	M04B0028	Groundwater progress moni	Monthly
3/09/95	M04C0018	Groundwater progress moni	Monthly
3/12/95	M04C0019	Groundwater progress moni	Monthly
3/12/95	M04C0020	Groundwater progress moni	Monthly
3/01/95	S14K0014	Groundwater progress moni	Special
3/01/95	S14K0015	Groundwater progress moni	Special
3/03/95	S14L0026	Groundwater progress moni	Special
3/01/95	S14A0092	Misc. groundwater	Special
3/01/95	S16A0008	Misc. process water	Special
3/08/95	M01D0054	Personal air monitoring	Monthly
3/16/95	M08A0020	Potable water monitoring	Quarterly
3/16/95	M08B0008	Potable water monitoring	Quarterly
3/02/95	M06C0025	Process water monitoring	Monthly
3/14/95	M08C0011	Riverdale well monitoring	Quarterly
3/13/95	M08D0014	Riverdale well monitoring	Quarterly
3/15/95	S16B0031	San Jacinto river metals	Special
3/02/95	M03A0313	Treated water discharge	Bi-weekly
3/06/95	M03A0314	Treated water discharge	Bi-weekly
3/09/95	M03A0315	Treated water discharge	Bi-weekly
3/13/95	M03A0316	Treated water discharge	Bi-weekly
3/16/95	M03A0317	Treated water discharge	Bi-weekly
3/20/95	M03A0318	Treated water discharge	Bi-weekly
3/23/95	M03A0319	Treated water discharge	Bi-weekly
3/27/95	M03A0320	Treated water discharge	Bi-weekly
3/30/95	M03A0321	Treated water discharge	Bi-weekly

MONTHLY PROGRESS REPORT Quality Assurance/Quality Control

French Ltd. Project

TABLE 7-3

Treated Water QC Failure Summary

Sample Date	Test	QC Failure	Explanation	Corrective Action
02/06/95	Ва	ICP Serial Dilution	ICP Serial dilution indicated interference.	None required - LCS, Duplicate and Spike were within QC limits
02/06/95	SV	SU Recov.	Surrogate Tribromophenol was outside QC limits	None required - One acid and one Base/neutral surrogate failure is allowable.
02/09/95	Ва	ICP Serial Dilution	ICP Serial dilution indicated interference.	None required - LCS, Duplicate and Spike were within QC limits
02/09/95	SV	SU Recov.	Surrogate Tribromophenol was outside QC limits	None required - One acid and one Base/neutral surrogate failure is allowable.
02/13/95	Mn	ICP Serial Dilution	ICP Serial dilution indicated interference.	None required - LCS, Duplicate and Spike were within QC limits
02/20/95	Ва	ICP Serial Dilution	ICP Serial dilution indicated interference.	None required - LCS, Duplicate and Spike were within QC limits
02/20/95	Mn	ICP Serial Dilution	ICP Serial dilution indicated interference.	None required - LCS, Duplicate and Spike were within QC limits
02/27/95	Ва	ICP Serial Dilution	ICP Serial dilution indicated interference.	None required - LCS, Duplicate and Spike were within QC limits
03/02/95	Ва	ICP Serial Dilution	ICP Serial dilution indicated interference.	None required - LCS, Duplicate and Spike were within QC limits
03/02/95	Mn	ICP Serial Dilution	ICP Serial dilution indicated interference.	None required - LCS, Duplicate and Spike were within QC limits
03/06/95	Pb	Spike Accuracy	Spike percent recovery was outside QC limits.	None required - LCS and duplicate were within control limits. Sample concentration was well below action level.
03/09/95	Ва	ICP Serial Dilution	ICP Serial dilution indicated interference.	None required - LCS, Duplicate and Spike were within QC limits

7.2.2 Completeness Summaries

Tables 7-4 through 7-8 summarize completeness values for VOA, SVA, PCBs, Metals and miscellaneous parameters on treated water samples.

VOA (Table 7-4)

A total of 10 VOA sample sets have been validated with all categories meeting Project Completeness Goals.

SVA (Table 7-5)

A total of 10 SVA sample sets have been validated for this time period. All categories meet or exceed Project Completeness Goals with the exception of sample matrix effect. This is due to matrix effect failures in the early stages of the project and the MS/MSD accuracy failures that occurred during September and October 1994.

PCBs (Table 7-6)

A total of 10 PCB sample sets have been validated for this time period with all samples, meeting data quality objectives. All categories meet or exceed Project Completeness Goals.

Metals (Table 7-7)

A total of 10 sample sets have been validated for this time period. Project Completeness Goals are met or exceeded in all categories.

Miscellaneous Parameters (Table 7-8)

A total of 10 sample sets have been validated for this time period. Project completeness goals are met or exceeded in all categories.

TABLE 7-4

Completeness Summary M03A Treated Water Volatile Organics Analyses

SAMPLE DATE SET NUMBER	M03A0306 thru M03A0315	Project to Date	PROJECT GOAL
Analysis Holding Time 12 Hour Window	100 100	100 100	100 100
SU Check SU1 (d4-1,2-DCE) SU2 (d8-Toluene) SU3 (4-BFB) IS Check IS1 (BrCIMethane) IS2 (1,4-DiFIBenzene) IS3(d5-CIBenzene)	100 100 100 100 100 100 100	93 97 98 99 100 100 100	90 90 90 90 90 90
Sample RT/RRT Check Vinyl Chloride Accuracy Precision	100 100 100	* 99 99	90 90
Benzene Accuracy Precision	100 90	99 100	90 90
No Group Matrix Effect No Sample Matrix Effect	100 100	*	90 90
Tune Check Overall ICAL Check Overall CCAL Check Overall Lab Blank Check	100 100 100 100	*	

^{* -} Level II QC checks were performed on 10% of samples prior to 6/14/93. PTD completeness values do not apply to these checks.

TABLE 7-5

Completeness Summary M03A Treated Water Semivolatile Organic Analyses

SAMPLE DATE SET NUMBER	M03A0306 thru M03A0315	Project to Date	PROJECT GOAL
Extract Holding Time	100	100	100
Analysis Holding Time	100	100	100
12 Hour Window	100	100	100
SU Check	100	95	90
SU1 (2-FIPhenol)	100	95	90
SU2 (d5-Phenol)	100	93	90
SU3 (d5-Nitrobenz)	60	96	90
SU4(2-FIBiphenyl)	100	97	90
SU5(2,4,6-TBPh)	100	94	90
SU6(d14-Terphen)	100	94	90
IS Check	100	96	90
IS1 (d4-1,4-DiClBenz)	100	100	90
IS2 (d8-Naph)	100	100	90
IS3 (d10-Acenaph)	100	100	90
IS4 (d10-Phenanth)	100	100	90
IS5 (d12-Chrysene)	90	97	90
IS6 (d12-Perylene)	100	96	90
Sample RT/RRT	100	•	*
Napthalene			
Accuracy	90	96	90
Precision	100	99	90
No Group Matrix Effect	100	100	90
No Sample Matrix Effect	100	89	90
Tune Check	100	*	•
Overall ICAL Check	100	*	•
Overall CCAL Check	100	*	*
Overall Lab Blank Check	100	•	*

^{* -} Level II QC checks were performed on 10% of samples prior to 6/14/93. PTD completeness values do not apply to these checks.

TABLE 7-6

Completeness Summary MO3A Treated Water PCB Analyses

SAMPLE DATE SET NUMBER	M03A0306 thru M03A0315	Project to Date	PROJECT GOAL
Extract Holding Time	100	100	100
Analysis Holding Time	100	100	100
12 Hour Window	100	100	100
	400	00	00
SU Check - Column A	100	99	90
SU1 (DCBP)	100	85	NS
SU2 (TCMX)	100	97	NS
SU Check - Column B	100	98	90
SU1 (DCBP)	100	87	NS
SU2 (TCMX)	100	97	NS
SU Check - Column A or B	100	98	90
Aroclor 1242			
Accuracy	100	99	90
Precision	100	97	90
Overall ICAL Check	100	*	
Overall 1st CCAL Check	100		
Overall 2nd CCAL Check	100	•	
Overall Lab Blank Check	100	•	

^{* -} Level II QC checks were performed on 10% of samples prior to 6/14/93. PTD completeness values do not apply to these checks.

TABLE 7-7

Completeness Summary M03A Treated Water Metals Analyses

SAMPLE DATE SET NUMBER	M03A0306 thru M03A0315	PROJECT GOAL
ANALYTE: BARIUM		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100
ANALYTE: CADMIUM		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100
ANALYTE: CHROMIUM		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100
ANALYTE: COPPER		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100
ANALYTE: LEAD		
MS Accuracy	90	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100

W - All samples waived due to low response

Furnace analyses - failure of analytical spike or low MSA coefficient ICP analyses - failure of serial dilution

^{*} Matrix interference is indicated by:

FLTG. Incorporated

TABLE 7-7 (Continued)

Completeness Summary M03A Treated Water Metals Analyses

SAMPLE DATE SET NUMBER	M03A0306 thru M03A0315	PROJECT GOAL
ANALYTE: MANGANESE		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA 100
Prep Blank Check	100 100	100 100
Lab Control Spike Check	100	100
ANALYTE: NICKEL		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100
ANALYTE: SILVER		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100
ANALYTE: ZINC		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100
ANALYTE: MERCURY		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100

W - All samples waived due to low response

Furnace analyses - failure of analytical spike or low MSA coefficient ICP analyses - failure of serial dilution

Matrix interference is indicated by:

MONTHLY PROGRESS REPORT Quality Assurance/Quality Control

French Ltd. Project

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TABLE 7-7 (Continued)

Completeness Summary M03A Treated Water Metals Analyses

SAMPLE DATE SET NUMBER	M03A0306 thru M03A0315	PROJECT GOAL
ANALYTE:ARSENIC		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100
ANALYTE: SELENIUM		
MS Accuracy	100	95
DUP Precision/Difference	100	95
No Matrix Interference*	100	NA
Prep Blank Check	100	100
Lab Control Spike Check	100	100

W - All samples waived due to low response

Furnace analyses - failure of analytical spike or low MSA coefficient ICP analyses - failure of serial dilution

Matrix interference is indicated by:

FLTG. Incorporated

TABLE 7-8

Completeness Summary M03A Treated Water Miscellaneous Parameters Analyses

SAMPLE DATE SET NUMBER	M03A0306 thru M03A0315	Project to Date	PROJECT GOAL
PARAMETER: TOC			
Analysis Hold Time	100	100	100
MS Accuracy	100	100	NA
DUP Precision	100	100	NA
PARAMETER: OILS			
Analysis Hold Time	100	100	100
MS Accuracy	100	100	NA
DUP Precision	100	100	NA
PARAMETER: TSS			
Analysis Hold Time	100	100	100
MS Accuracy	NA	NA	NA
DUP Precision	100	100	NA

MONTHLY PROGRESS REPORT Quality Assurance/Quality Control

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TABLE 7-9

Sample Failure Summary 1994 Annual Groundwater Monitoring Volatile Organics Analyses

Sample Number	QC Level	QC Failure	Explanation	Corrective Action
M04B0018 (All)	1	Analysis HT	Samples were analyzed after holding time had expired.	Analysis invoice not paid.
M04B0022 (All)	I	Blank Clean	Blank had 1,2-Dichloroethane at greater than allowable concentration.	Data flagged.
M04B0023 (All)	ı	Blank Clean	Blank had 1,2-Dichloroethane at greater than allowable concentration.	Data flagged.
M04D001703 RA	1	Analysis HT	Sample re-analysis was performed after holding time had expired.	Data flagged.
M04D001703 M04D001707	1	12 Hour	Samples analyzed outside 12 hour tune window.	Data used with caution. Invoice not paid. Compounds of concern still well above cleanup criteria.
M04G0002 (All)	l	Blank Clean	Blank had 1,2-Dichloroethane at greater than allowable concentration.	Data flagged.

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TABLE 7-10

Sample Failure Summary 1994 Annual Groundwater Monitoring Semivolatile Organics Analyses

Sample Number	QC Level	QC Failure	Explanation	Corrective Action
M04D001605 DL	1	SU Recov.	Surrogate recovery was outside control limits for diluted sample.	None required. Data not affected.
M04D001704 M04D001704 DL	1	SU Recov.	Surrogate recovery was outside control limits for sample and diluted sample.	None required. Data not affected.
M04D001707 M04D001707 RE M04D001702, & 02MS M04D001702 RE		SU Recov.	Surrogate recovery was outside control limits for sample and re-extracted sample.	None required. Data not affected.
M04D001702 RE M04D001707 RE	I	Extract. HT	Extraction holding time was exceeded for the re-extraction	None required.
M04D001801 & RE M04D001802 & RE	ı	SU Recov.	Surrogate recovery was outside control limits for sample and re-extracted sample.	None required. Data not affected.
M04D001801 RE M04D001802 RE	I	Extract. HT	Extraction holding time was exceeded for the re-extraction	None required.
M04G000201 M04G000201 RE	I	SU Recov.	Surrogate recovery was outside control limits for sample and reextracted sample.	Sample was re-extracted and all surrogates were within QC limits.
M04H000201	I	Extract. HT	Extraction holding time was exceeded.	Analytical invoice was not paid.

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TABLE 7-11

Sample Failure Summary 1994 Annual Groundwater Monitoring Pesticide/PCB Analyses

Sample QC QC Failure Explanation Number Level		Explanation	Corrective Action		
M04D0014 (Most)	I	SU Recov.	Surrogate recoveries for most samples were outside QC limits on both columns.	None required - Matrix effect indicated.	
M04D0015 (Most)	1	SU Recov.	Surrogate recoveries for most samples were outside QC limits on both columns.	None required - Matrix effect indicated.	
M04D0016 (Most)	I	SU Recov.	Surrogate recoveries for most samples were outside QC limits on both columns.	None required - Matrix effect indicated.	
M04D0017 (All)	1	SU Recov.	Surrogate recoveries for all samples, including MS/MSD, were outside QC limits.	None required - Matrix effect indicated.	
M04D0018 (All)	I	SU Recov. Surrogate recoveries for all samples, including MS/MSD, outside QC limits.		None required - Matrix effect Indicated.	
M04D0017 MS/MSD Pair	ı	MS Accur.	Matrix spike percent recovery was outside QC limits	Matrix effect indicated.	
M04D0018 MS/MSD Pair	ı	MS Accur.	Matrix spike percent recoveries were outside QC limits	Matrix effect indicated.	

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TABLE 7-12

Sample Failure Summary 1994 Annual Groundwater Monitoring Metals Analyses

Sample	QC	QC Failure	Explanation	Corrective
Number	Level			Action
Aluminum				
M04D0014 (All)		Dup Prec. MS Accur.	Duplicate precision was outside control limits Matrix spike percent recovery	None required - No cleanup criteria for this analyte.
			was outside control limits.	
M04D0015 (All)	I	Dup Prec.	Duplicate precision was outside control limits	None required - No cleanup criteria for this
		MS Accur.	Matrix spike percent recovery was outside control limits.	analyte.
M04D0016 (All)	I	Dup Prec.	Duplicate precision was outside control limits	None required - No cleanup criteria for this
		MS Accur.	Matrix spike percent recovery was outside control limits.	analyte.
M04D0017 (Ali)	ı	Dup Prec.	Duplicate precision was outside control limits	None required - No cleanup criteria for this
		MS Accur.	Matrix spike percent recovery was outside control limits.	analyte.
		Ser. Dilut.	ICP serial dilution indicated interference.	
M04D0018 (All)	1	Dup Prec.	Duplicate precision was outside control limits	None required - No cleanup criteria for this
		MS Accur.	Matrix spike percent recovery was outside control limits.	analyte.
		Ser. Dilut.	ICP serial dilution indicated interference.	
Barium				
M04D0017 (All)	1	Ser. Dilut.	ICP serial dilution indicated interference.	None required - No cleanup criteria for this analyte.
M04D0018 (All)	1	Ser. Dilut.	ICP serial dilution indicated interference.	None required - No cleanup criteria for this analyte.
Manganese				
M04D0017 (All)	ı	Ser. Dilut.	ICP serial dilution indicated interference.	None required - No cleanup criteria for this analyte.
M04D0018 (All)	1	Ser. Dilut.	ICP serial dilution indicated interference.	None required - No cleanup criteria for this analyte.

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TABLE 7-12 (continued)

Sample Failure Summary 1994 Annual Groundwater Monitoring Metals Analyses

Sample Number	QC Level	QC Failure	Explanation	Corrective Action		
Magnesium						
M04D0017 (All)	l	Ser. Dilut.	ICP serial dilution indicated interference.	None required - No cleanup criteria for this analyte.		
M04D0018 (All)	1	Ser. Dilut.	ICP serial dilution indicated interference.	None required - No cleanup criteria for this analyte.		
Iron						
M04D0014 (All)		Ser. Dilut. MS Accur.	ICP serial dilution indicated interference. Matrix spike percent recovery was outside control limits.	None required - No cleanup criteria for this analyte.		
M04D0015 (All)		Ser. Dilut. MS Accur.	ICP serial dilution indicated interference. Matrix spike percent recovery was outside control limits.	None required - No cleanup criteria for this analyte.		
M04D0016 (All)	1	Ser. Dilut. MS Accur.	ICP serial dilution indicated interference. Matrix spike percent recovery was outside control limits.	None required - No cleanup criteria for this analyte.		

^{*}All sets QC Level I.

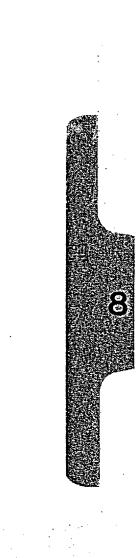
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TABLE 7-13

Sample Failure Summary 1994 Annual Groundwater Monitoring Miscellaneous Parameters Analyses

Sample QC Number Level		QC Failure Explanation		Corrective Action		
Nitrate						
M04B0022 (All)	l I	Anatysis HT	Sample was analyzed after holding time had expired,	Analysis invoice not paid.		
M04E000901	ı	Analysis HT	Sample was analyzed after holding time had expired,	Analysis invoice not paid.		
M04F0009 (Ali)	1	Analysis HT	Sample was analyzed after holding time had expired,	Analysis invoice not paid.		
M04G0002 (All)		Analysis HT	Sample was analyzed after holding time had expired,	Analysis invoice not paid.		
Orthophosphate						
M04B0022 (All)	I Analysis HT Sample was analyzed after holding time had expired,		Analysis invoice not paid.			
M04E000901	ı	Analysis HT	Sample was analyzed after holding time had expired,	Analysis invoice not paid.		
M04F0009 (All)	I	Analysis HT	Sample was analyzed after holding time had expired,	Analysis invoice not paid.		
M04G0002 (All) I Analysis HT		Sample was analyzed after holding time had expired,	Analysis invoice not paid.			

^{*}Ali sets QC Level I.



8.0 SITE MAINTENANCE

8.1 Summary of Activities

8.1.1 General Housekeeping

The site safety and housekeeping inspections and responses kept grounds safe and attractive for employees and visitors.

8.1.2 Purchasing

All purchases were covered by written requisitions and purchase orders. Purchase of chemicals is now reduced to groundwater treatment and insitu remediation.

A contract extension was issued to JEDI for completion for two INT pumping wells on Task #18.

8.1.3 Equipment Maintenance

Routine preventive and production maintenance was performed on all equipment.

8.2 Visitors

The following visitors were recorded at the site during March:

March 9: local resident

March 10: Margaret O'Hare, CH2M Hill

March 14: Burt Campbell, PMCI

Vince Small, C&L George Gregory, C&L Steve Guezzo, PMCI

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March 17:

(b) (6) local resident

(b) (6) local resident

March 22:

Chuck Collins, Sr., Tom-Mac

March 31:

Dick Woodward, Sierra

Salil Sen, Calgon

Marta Bourke, Calgon

8.3 Emergency Equipment

8.3.1 Flood Gate Test

The flood gate was exercised on March 19, 1995, with one small leak detected at the striker seal.

8.3.2 P-8 Auxiliary Pump

P-8 Auxiliary Pump has been converted to the lagoon ground cover vegetation sprinkler source. It has operated approximately 72 hours in March.

8.3.3 Fire Extinguishers

All fire extinguishers were inspected and certified.

8.4 Security

Smith Security provides 24-hour security at the FLTG site, including the south side of Gulf Pump Road; all site areas are checked hourly. No incidents reported by Security in March.

8.5 Operator Training

All training is documented and records are maintained on site.

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8.6 Data Management

Data base is fully operational. Data is entered on a daily basis.

8.7 Personnel Monitoring

Results of personnel monitoring conducted during March are included in Table 8-1.

8.8 OVM System

Work areas are being monitored daily with Organic Vapor Monitor 580A.

8.9 Repository

Records from the March review are listed in Attachment 8A.

8.10 Meteorological Data

The new meteorological station was placed on-line January 25th and is now operational. Data is generated on a weekly basis.

Rainfall data is listed in Table 8-2.

TABLE 8-1

On-Site Employee Contaminant Limits (From OSHA 29 CFR 1910 Subpart Z)

	PEL 8 hour	M01D005401	•	M01D005402		M01D005403	8-Mar-95
Compound	PPM	WTP O		Sample Trailer		Security	
Compound	PPNI	% of PEL	PPM	% of PEL	PPM	% of PEL	PPM
Chloromethane	50	0.001	0.000	0.001	0.001	0.002	0.001
Bromomethane	5	0.000	0.000	0.000	0.000	0.000	0.000
Vinyl chloride	1	0.000	0.000	0.000	0.000	0.000	0.000
Chloroethane	1000	0.000	0.000	0.000	0.000	0.000	0.000
Dichloromethane	50	0.002	0.001	0.005	0.003	0.010	0.005
Acetone	750	0.001	0.004	0.001	0.005	0.001	0.005
Carbon disulfide	10	0.000	0.000	0.000	0.000	0.000	0.000
1,1-Dichloroethene	5	0.000	0.000	0.074	0.004	0.303	0.015
1,1-Dichloroethane	100	0.000	0.000	0.000	0.000	0.000	0.000
trans-1,2-Dichloroethe	200	0.000	0.001	0.002	0.004	0.004	0.008
Chloroform	10	0.018	0.002	0.003	0.000	0.005	0.001
1,2-Dichloroethane	10	0.002	0.000	0.000	0.000	0.000	0.000
2-Butanone	200	0.000	0.000	0.000	0.001	0.000	0.000
1,1,1-Trichloroethane	350	0.000	0.000	0.000	0.000	0.000	0.000
Carbon Tetrachloride	5	0.000	0.000	0.000	0.000	0.000	0.000
Vinyl acetate	10	0.000	0.000	0.000	0.000	0.000	0.000
Bromodichloromethane			0.000		0.000	3.555	0.000
1,2-Dichloropropane	75	0.000	0.000	0.000	0.000	0.000	0.000
cis-1,3-Dichloropropen	1	0.000	0.000	0.000	0.000	0.000	0.000
Trichloroethene	50	0.000	0.000	0.000	0.000	0.000	0.000
Dibromochtoromethane			0.000		0.000		0.000
1,1,2-Trichloroethane	10	0.000	0.000	0.000	0.000	0.000	0.000
Benzene	1	0.000	0.000	0.069	0.001	0.000	0.000
trans-1,3-Dichloroprop	1	0.000	0.000	0.000	0.000	0.000	0.000
2-Chloroethylvinyl ether	7		0.000		0.000		0.000
Bramoform	0.5	0.000	0.000	0.000	0.000	0.000	0.000
4-Methyl-2-pentanone	50	0.000	0.000	0.000	0.000	0.000	0.000
2-Hexanone	5	0.000	0.000	0.000	0.000	0.000	0.000
Tetrachloroethene	50	0.000	0.000	0.000	0.000	0.000	0.000
1,1,2,2-Tetrachloroet	1	0.000	0.000	0.000	0.000	0.000	0.000
Toluene	100	0.000	0.000	0.001	0.001	0.000	0.000
Chlorobenzene	10	0.000	0.000	0.000	0.000	0.000	0.000
Ethylbenzene	100	0.000	0.000	0.000	0.000	0.000	0.000
Styrene	50	0.000	0.000	0.000	0.000	0.000	0.000
Xylene (total)	100	0.000	0.000	0.000	0.000	0.000	0.000
Hexane			0.002	ll	0.002		0.003

TABLE 8-2
Rainfall Data for March, 1995

			Avg Wind	Avg	Avg	Avg Bar.
		Rainfall	Speed	Temp.	Rel. Hum.	Pressure
Day	Date	Inches	(mph)	(deg. C)	(%)	mbar
Wednesday	1-Mar-95	0.15	6.4	12	80	1022
Thursday	2-Mar-95	0.13	4.5	8	88	1024
Friday	3-Mar-95	0.07	5.1	7	97	1024
Saturday	4-Mar-95	0.06	2.3	11	100	1017
Sunday	5-Mar-95	0.01	1.9	17	96	1012
Monday	6-Mar-95	0.01	5.1	21	95	1009
Tuesday	7-Mar-95	0.67	11.7	12	82	1012
Wednesday	8-Mar-95	0.00	9	7	51	1027
Thursday	9-Mar-95	0.00	2	9	59	1029
Friday	10-Mar-95	0.00	3.1	11	78	1027
Saturday	11-Mar-95	0.00	5.3	16	89	1023
Sunday	12-Mar-95	0.00	8.7	19	89	1017
Monday	13-Mar-95	1.88	5.7	17	96	1013
Tuesday	14-Mar-95	0.00	2.6	16	83	1014
Wednesday	15-Mar-95	0.01	1.8	15	86	1013
Thursday	16-Mar-95	0.02	2.1	15	87	1013
Friday	17-Mar-95	0.04	2	15	93	1015
Saturday	18-Mar-95	0.00	2.8	17	78	1017
Sunday	19-Mar-95	0.00	1.9	20	66	1016
Monday	20-Mar-95	0.00	5.5	22	70	1011
Tuesday	21-Mar-95	0.00	4.2	23	79	1010
Wednesday	22-Mar-95	0.00	5.8	22	81	1010
Thursday	23-Mar-95	0.00	5.2	24	84	1008
Friday	24-Mar-95	0.00	2.5	23	89	1008
Saturday	25-Mar-95	0.00	5.4	22	88	1008
Sunday	26-Mar-95	0.00	7	23	87	1009
Monday	27-Mar-95	0.03	5.9	22	86	1012
Tuesday	28-Mar-95	0.00	6	21	45	1017
Wednesday	29-Mar-95	0.35	6.7	14	80	1016
Thursday	30-Mar-95	0.37	5.6	11	96	1016
Friday	31-Mar-95	0.00	3.9	18	75	1014

March Monthly Averages:	3.80 *	4.8	16.5	82.4	1016

^{* =} Total inches rainfall

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MONTHLY PROGRESS REPORT Site Maintenance

French Ltd. Project FLTG, Incorporated

ATTACHMENT 8A

Repository Status Report: March, 1995

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REPOSITORY STATUS REPORT: March, 1995

At the Rice University Library...

- 1. Remedial Investigation Report April, 1985
- 2. Remedial Investigation Report Appendices, Volume II, April, 1985
- 3. Remedial Investigation Report June, 1986 (Updated from April, 1985)
- 4. Remedial Investigation Report Appendices, Volume I, February, 1986 (Revised June, 86)
- 5. Remedial Investigation Report Appendices, Volume II, February, 1986 (Revised June, 1986)
- 6. Remedial Investigation Report Appendices, Volume III, February, 1986
- 7. 1986 Field Investigation and Supplemental Remedial Investigation Report Volume I, December, 1986
- 8. 1986 Field Investigation and Supplemental Remedial Investigation Report French Limited Site Volume II, Appendices December, 1986
- 9. 1986 Field Investigation Hydrology Report, December 19, 1986
- 10. Endangerment Assessment Report February, 1987
- 11. Endangerment Assessment Report April 1987 (Updated from February, 1987)
- 12. Feasibility Study Report, March 1987
- 13. In Situ Biodegradation Demonstration Report Volume I Executive Summary, October 30, 1987 Revised 11-11-87
- 14. In Situ Biodegradation Demonstration Supplemental Report French Limited Site Volume I, November 30, 1987
- 15. In Situ Biodegradation Demonstration Report Volume II, October 30, 1987 (Revised February 1, 1988 at Site only)
- 16. In Situ Biodegradation Demonstration Supplemental Report French Limited Site Volume II, November 30, 1987 + Appendices

- 17. In Situ Biodegradation Demonstration Report Volume III Appendices, October 30, 1987
- 18. In Situ Biodegradation Demonstration Report Volume III, Appendices, Supplemental Report, November 30, 1987
- 19. In Situ Biodegradation Demonstration Report French Limited Site, Volume IV October 30, 1987 + Appendices
- 20. In Situ Biodegradation Demonstration Supplemental Report French Limited Site, Volume IV November 30, 1987 + Appendices
- 21. In Situ Biodegradation Demonstration Report French Limited Site Volume V, October 30, 1987
- 22. In Situ Biodegradation Demonstration Report French Limited Site Volume V Appendices, November 30, 1987 Supplemental Report
- 23. In Situ Biodegradation Demonstration Report French Limited Site Volume VI Appendices, October 30, 1987
- 24. In Situ Biodegradation Demonstration Report French Limited Site Volume VII Appendices, October 30, 1987
- 25. In Situ Biodegradation Demonstration Report French Limited Site Volume VIII Appendices, October 30, 1987
- 26. In Situ Biodegradation Demonstration Report French Limited Site Volume IX Appendices, October 30, 1987
- 27. In Situ Biodegradation Demonstration Report French Limited Site Volume X Appendices, October 30, 1987
- 28. In Situ Biodegradation Demonstration Report French Limited Site Volume XI Appendices, October 30, 1987
- 29. In Situ Biodegradation Demonstration Report French Limited Site Volume XII Appendices, October 30, 1987
- 30. In Situ Biodegradation Demonstration Report French Limited Site Volume XIII Appendices, October 30, 1987
- 31. In Situ Biodegradation Demonstration Report French Limited Site Volume XIV Appendices, October 30, 1987

- 32. In Situ Biodegradation Demonstration Report French Limited Site Volume XV Appendices, October 30, 1987
- 33. In Situ Biodegradation Demonstration Report French Limited Site Volume XVI Appendices, October 30, 1987
- 34. In Situ Biodegradation Demonstration Report French Limited Site Volume XVII Appendices, October 30, 1987
- 35. In Situ Biodegradation Demonstration Report French Limited Site Volume XVIII Appendices, October 30, 1987
- 36. Proposed In Situ Biodegradation Demonstration French Limited Site Phase III, April, 1987
- 37. In Situ Bioremediation Demonstration French Limited April, 1987 Monthly Report, Equipment Evaluation Phase IV
- 38. In Situ Bioremediation Demonstration French Limited May, 1987 Monthly Report, Equipment Evaluation Phase IV
- 39. In Situ Bioremediation Demonstration French Limited June, 1987 Monthly Report, Equipment Evaluation Phase IV
- 40. In Situ Bioremediation Demonstration French Limited July, 1987 Monthly Report, Equipment Evaluation Phase IV
- 41. In Situ Bioremediation Demonstration French Limited August, 1987 Monthly Report, Equipment Evaluation Phase IV
- 42. In Situ Bioremediation Demonstration French Limited November, 1987 Monthly Report, Equipment Evaluation Phase IV.
- 43. In Situ Bioremediation Demonstration French Limited December, 1987 Monthly Report, Equipment Evaluation Phase IV
- 44. In Situ Bioremediation Demonstration French Limited January, 1988 Monthly Report, Equipment Evaluation Phase IV
- 45. In Situ Bioremediation Demonstration French Limited February, 1988 Monthly Report, Equipment Evaluation Phase IV
- 46. In Situ Bioremediation Demonstration French Limited March, 1988 Monthly Report, Equipment Evaluation Phase IV

- 47. In Situ Bioremediation Demonstration French Limited April, 1988 Monthly Report, Equipment Evaluation Phase IV
- 48. In Situ Biodegradation Demonstration French Limited May/June 1988 Monthly Report, Equipment Evaluation Phase IV
- 49. In Situ Bioremediation Demonstration French Limited July, 1988 Monthly Report, Equipment Evaluation Phase IV
- 50. In Situ Bioremediation Demonstration French Limited August, 1988 Monthly Report, Equipment Evaluation Phase IV
- 51. In Situ Bioremediation Demonstration French Limited September, 1988 Monthly Report, Equipment Evaluation Phase IV
- 52. Supplemental Biodegradation Equipment Evaluation French Limited Site Phase IV, September 26, 1988
- 53. In Situ Biodegradation Demonstration Phase III Quality Assurance Project Plan for French Limited Site, March, 1987
- 54. Addendum to Quality Assurance Project Plan for the French Limited Site In Situ Biodegradation Demonstration Phase III, February 16, 1990
- 55. Site Safety and Health Plan French Limited Site Phase III, April 1987 (Revision 2)
- 56. Remedial Action Plan Volume I April, 1990
- 57. Remedial Action Plan Volume I September, 1990 (Updated from April, 1990)
- 58. Remedial Action Plan Volume II Quality Assurance April, 1990
- 59. Remedial Action Plan Volume II Quality Assurance September, 1990 (Updated from April 1990) Revised June 3, 1991
- 60. Remedial Action Plan Volume II Quality Assurance June, 1990
 Appendix A Quality Assurance Sampling Procedures and
 Appendix B Analytical Methods B.1 B.53, September 22, 1989
 Revised September 28, 1990
- 61. Remedial Action Plan Volume III Health and Safety, July 20, 1990

- 62. Remedial Action Plan Volume IV Spill and Volatile Organic Release Contingency Plan (April 6, 1990)
- 63. Remedial Action Plan Volume V Shallow Aquifer and Subsoil Remediation Process Design, May, 1990
 Page v.i.3 Missing
- 64. Remedial Action Plan Volume V Shallow Aquifer and Subsoil Remediation Process Design, July 20, 1990, (Updated from May, 1990)
- 65. 1988 Equipment Evaluation Phase IV Report French Limited Site: Volume I, February 1,1990
- 66. 1988 Equipment Evaluation Phase IV Report French Limited Site: Volume II, February 1, 1990
- 67. 1988 Slough Investigation Report French Limited Site, October 1988
- 68. Ambient Air Impact Risk Assessment Report, May 5, 1989
- Workplan for the Shallow Aquifer Pumping Tests for the French Limited Site, July1988Page 80 Missing
- 70. French Limited Site Hurricane Gilbert Preparation Report, October, 1988
- 71. Potable Water Well Installation Report French Limited Site, December 7, 1988
- 72. Bioresidue Fixation Alternatives Evaluation Report French Limited Site March 20, 1989
- 73. Hydrogeologic Characterization Report, March 1989
- 74. Hydrogeologic Characterization Report Appendices, March 1989
- 75. San Jacinto River May 19, 1989 Flood Event Report, June 1989
- 76. Post San Jacinto River May 1989 Flood Event Soils and Water Analysis Program Volume I, August 16, 1989
- 77. Post San Jacinto River 1989 Flood Event Soil and Water Analysis Program Volume II Appendix A

- 78. Post San Jacinto River 1989 Flood Event Soil and Water Analysis Program Volume III Appendix A, August 16, 1989
- 79. Riverdale Lake Area Remediation Program August 15, 1989
- 80. Flood and Migration Control Wall Design Report, August 16, 1989
- 81. Flood and Migration Control Wall Design Report Appendix C Access Way Design, September, 1989
- 82. North Pit Remediation Report French Limited Site, November 6, 1989
- 83. Installation Report for Flood and Migration Control Wall, January 8, 1990
- 84. Installation Report for Flood and Migration Control Wall Appendix A ENSR Site Logs
- 85. Installation Report for Flood and Migration Control Wall Appendix B Inspection Reports
- 86. Installation Report for Flood and Migration Control Wall Appendix C Pile Driving Inspection Report January 8, 1990
- 87. Flood Wall Gate Test Report French Limited Site, February 1990
- 88. French Limited Remediation Design Report Executive Summary Bioremediation/Shallow Aquifer, July, 1991
- 89. Shallow Aquifer and Subsoil Remediation Facilities Design Report Volume I of III Summary Report and Appendices A-H, July 1991
- 90. Shallow Aquifer and Subsoil Remediation Facilities Design Report Volume II of III
 Appendices I-M, June 1991
- 91. Shallow Aquifer and Subsoil Remediation Facilities Design Report Volume III of III Appendices N-P, June 1991
- 92. Bioremediation Facilities Design Report Volume II of IV Appendices, Reports and Calculations (March 20, 1991)
- 93. Bioremediation Facilities Design Report Volume III of IV Appendix E Design Specifications (March 20, 1991)

Site Maintenance

- 94. Bioremediation Facilities Design Report Volume IV of IV Air Monitoring, March 20, 1991
- 95. Public Health Assessment for French Limited March 30, 1993 from U.S. Department of Health and Human Services
- 96. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 1, Report, Appendices A-E
- 97. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 2, Appendix F
- 98. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 3, Appendix F continued
- 99. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 4, Appendix G
- 100. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 5, Appendix H
- 101. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 6, Appendix H continued
- 102. Record of Public Meeting Regarding Remedial Investigation and Feasibility Study (5-21-87)
- 103. Summary of Remedial Alternative Selection 1988
- 104. Declaration for the Record of Decision 1988
- 105. Record of Public Meeting Regarding Remedial Investigation and Feasibility Study (2-11-88) (Updated from June 21, 1987)
- 106. Consent Decree between the Federal Government and the FLTG
- 107. French Limited Superfund Site Community Relations Revised Plan August, 1989 Jacob's Engineering
- 108. Results of the French Limited Task Group Survey (Goldman and Company)
 April, 1987
- 109. Goldman Public Relations Clipping Report

- 110. BioGEE International, Inc., Project Report Biotreatability Study Using Isolated Indigenous Organisms, April, 1994
- 111. Field Evaluation of Biodegradation at the French Limited Site (Phase II) Volume I
- 112. Laboratory Evaluation of Biodegradation at the French Limited Site
- 113. French Limited Site Focused Feasibility Study (May 1987)
- 114. Annual Groundwater Monitoring Report, December 1993, Report and Appendices A-B
- 115. Annual Groundwater Monitoring Report, December 1993, Appendices C-H
- 116. DNAPL Study Remedial Alternative Selection and Feasibility Study Report,
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- 117. Cell E and Cell D/F Remediation Verification Report
- 118. French Limited Wetlands Mitigation, Final Site Restoration Plan
- 119. French Limited Wetlands Mitigation, Site Selection Report
- 120. French Limited Wetlands Mitigation, 404 and 401 Permit Application, U.S. Army Corps of Engineers, Galveston, TX
- 121. Quality Assurance Report, February 15, 1993, Report No. QA93003
- 122. Quality Assurance Report, January 20, 1994, Report No. QA94001
- 123. Environmental Protection Agency, Region VI, Hazardous Waste Management Division, First Five Year Review (Type Ia), CERCLIS TXD-980514814, December 1944
- 124. ARCS, French Limited Site 1993, Annual Groundwater Sampling and Comparison Report, CH2M Hill, January, 1995
- 125. Annual Groundwater Monitoring Report, December, 1994, Report and Appendices A-G
- 126. Monthly Progress Report, January 1992
- 127. Monthly Progress Report, January, 1992 Appendices A-C

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- 128. Monthly Progress Report, January, 1992 Appendices E, F
- 129. Monthly Progress Report, January, 1992 Appendices G
- Monthly Progress Report, February, 1992
- Monthly Progress Report, February, 1992 Appendices A-B
- Monthly Progress Report, February, 1992 Appendices C 1
- Monthly Progress Report, February, 1992 Appendices C 2
- 134. Monthly Progress Report, February, 1992 Appendices D-E
- Monthly Progress Report, March, 1992
- 136. Monthly Progress Report, March, 1992, Appendix A
- Monthly Progress Report, April, 1992
- 138. Monthly Progress Report, April, 1992, Appendices A-B
- 139. Monthly Progress Report, May, 1992
- 140. Monthly Progress Report, May, 1992, Appendices A-B
- 141. Monthly Progress Report, June, 1992
- 142. Monthly Progress Report, June, 1992, Appendices A-B
- Monthly Progress Report, July 1992
- 144. Monthly Progress Report, July 1992, Appendices A-B
- Monthly Progress Report, July 1992, Appendices B1-B22 Vol. 1 of 3
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- Monthly Progress Report, July 1992, Appendices B1-B22 Vol. 3 of 3
- 148. Monthly Progress Report, August, 1992
- 149. Monthly Progress Report, August, 1992, Appendices A-B

- 150. Monthly Progress Report, September, 1992
- 151. Monthly Progress Report, September, 1992, Appendices A-B
- 152. Monthly Progress Report, October, 1992
- 153. Monthly Progress Report, October, 1992, Appendices A-B
- 154. Monthly Progress Report, November, 1992
- 155. Monthly Progress Report, November, 1992 Appendices A-B
- 156. Monthly Progress Report, December, 1992
- 157. Monthly Progress Report, December, 1992 Appendices A, B
- 158. Monthly Progress Report, January, 1993
- 159. Monthly Progress Report, February, 1993
- 160. Monthly Progress Report, March, 1993
- 161. Monthly Progress Report, April, 1993
- 162. Monthly Progress Report, May, 1993
- 163. Monthly Progress Report, June, 1993
- 164. Monthly Progress Report, July, 1993
- 165. Monthly Progress Report, August, 1993
- 166. Monthly Progress Report, September, 1993
- 167. Monthly Progress Report, October, 1993
- 168. Monthly Progress Report, November, 1993
- 169. Monthly Progress Report, December, 1993
- 170. Monthly Progress Report, January, 1994
- 171. Monthly Progress Report, February, 1994

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- 172. Monthly Progress Report, March, 1994
- 173. Monthly Progress Report, April, 1994
- 174. Monthly Progress Report, May, 1994
- 175. Monthly Progress Report, June, 1994
- 176. Monthly Progress Report, July, 1994
- 177. Monthly Progress Report, August, 1994
- 178. Monthly Progress Report, September, 1994
- 179. Monthly Progress Report, October, 1994
- 180. Monthly Progress Report, November, 1994
- 181. Monthly Progress Report, December, 1994
- 182. Monthly Progress Report, January, 1995
- 183. Monthly Progress Report, February, 1995

At the Crosby library...

- 1. Remedial Investigation Report June, 1986
- 2. Remedial Investigation Appendices Volume I June, I986 Revised from Feb. 1986
- 3. Remedial Investigation Appendices Volume II June, 1986 Revised from Feb. 1986
- 4. Remedial Investigation Appendices Volume III February, 1986
 Pages 1 and 2 of 10 Res. Engr Tab Missing
 Analytical Report Worksheet 7-8-9-10 Missing
 Pages 1 and 2 of 6 Missing
 Tab 9 H 1-8 Missing, H 11-19 Missing, Page 1 of 10 Missing
 Page 3 Worksheet Missing
 Tab 10 H 1-3 Missing, Page 3-6 of 6 Missing, Page 1-6 Missing
 Tab 12 Page 2-10 of 10 Missing
- 5. 1986 Field Investigation and Supplemental Remedial Investigation Report Volume I, December, 1986
- 6. 1986 Field Investigation and Supplemental Remedial Investigation Report Volume II, Appendices, December 1986
- 7. 1986 Field Investigation Hydrology Report, December 19, 1986
- 8. Feasibility Study Report, March 1987
- 9. Feasibility Study Report, March 1987
- 10. French Limited Site Focused Feasibility Study, May 1987
- 11. Endangerment Assessment Report February 1987
- 12. Endangerment Assessment Report April 1987
- 13. Endangerment Assessment Report April 1987
- 14. In Situ Biodegradation Demonstration Report Volume I Executive Summary October, 1987 (Revised 12-15-87)
- 15. In Situ Biodegradation Demonstration Report Volume II October 30, 1987

- 16. In Situ Biodegradation Demonstration Supplemental Report French Limited Site Volume I, November 30, 1987 Missing Supplements to 5-6 and 7 to 10
- 17. In Situ Biodegradation Demonstration Supplemental Report French Limited Site Volume II, November 30, 1987 + Appendices
- 18. In Situ Biodegradation Demonstration Supplemental Report French Limited Site Volume III, November 30, 1987 + Appendices
- 19. In Situ Biodegradation Demonstration Supplemental Report French Limited Site Volume IV, November 30, 1987 -Appendices
- 20. In Situ Biodegradation Demonstration Supplemental Report French Limited Site Volume V Appendices, November 30, 1987
- 21. Results of the French Limited Task Group Survey (Goldman and Company)
 April 1987
- 22. Goldman Public Relations Clipping Report
- 23. Consent Decree between the Federal Government and the FLTG
- 24. Consent Decree between the Federal Government and the FLTG
- 25. Laboratory Evaluation of Biodegradation at the French Limited Site, December 1986.
- 26. Field Evaluation of Biodegradation at the French Limited Site (Phase II) Volume I, March, 1987
- 27. Bioremediation Facilities Design Report Volume II of IV Appendices, Reports and Calculations March 20, 1991
- 28. Bioremediation Facilities Design Report Volume III of IV Appendix E Design Specifications March 20, 1991
- 29. Bioremediation Facilities Design Report Volume IV of IV Air Monitoring, March 20, 1991
- 30. Remedial Action Plan Volume I, September 28, 1990
- 31. Remedial Action Plan Volume II Quality Assurance, Revised June 3, 1991

- 32. Remedial Action Plan Volume II Appendix A Quality Assurance Sampling Procedures and Appendix B Analytical Methods B.1 B.53, September 28, 1990
- 33. Remedial Action Plan Volume III Health and Safety, July 20, 1990
- 34. Remedial Action Plan Volume V Shallow Aquifer and Subsoil Remediation Process Design, July 20, 1990
- 35. Remedial Action Plan Volume V Shallow Aquifer and Subsoil Remediation Process Design, July 20, 1990
- 36. Hydrogeologic Characterization Report, March 1989
- 37. Hydrogeologic Characterization Report Appendices, March 1989
- 38. Supplemental Biodegradation Equipment Evaluation French Limited Site Phase IV, September 26, 1988
- 39. 1988 Equipment Evaluation Phase IV Report French Limited Site: Volume I, February 1, 1990
- 40. 1988 Equipment Evaluation Phase IV Report French Limited Site: Volume II, February 1, 1990
- 41. Site Safety and Health Plan French Limited Site Phase III, April 1987 (Revision 2)
- 42. San Jacinto River May 19, 1989 Flood Event Report, June 1989
- 43. Post San Jacinto River May 1989 Flood Event Soils and Water Analysis Program Volume I, August 16, 1989
- 44. Post San Jacinto River 1989 Flood Event Soil and Water Analysis Program Volume II, Appendix A
- 45. Post San Jacinto River 1989 Flood Event Soil and Water Analysis Program Volume III, Appendix A, August 16, 1989
- 46. 1988 Slough Investigation Report French Limited Site, October 1988
- 47. Flood and Migration Control Wall Design Report, August 16, 1989

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- 48. Flood and Migration Control Wall Design Report (Flood is spelled incorrectly on Volume Cover) + Appendix C Access way Design September 1989
- 49. Installation Report for Flood and Migration Control Wall January 8, 1990
- 50. Installation Report for Flood and Migration Control Wall Appendix A ENSR Site Logs
- 51. Installation Report for Flood and Migration Control WallAppendix B Inspection Reports
- 52. Installation Report for Flood and Migration Control WallAppendix C Pile Driving Inspection Report January 8, 1990
- 53. Flood Wall Gate Test Report French Limited Site, February 1990
- 54. North Pit Remediation Report French Limited Site, November 6, 1989
- Workplan for the Shallow Aquifer Pumping Tests for the French Limited Site, July
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 (Additional Title Pumping Test Program for Shallow Alluvial Aquifer Zone)
- 56. French Limited Site Hurricane Gilbert Preparation Report October, 1988
- 57. Riverdale Lake Area Remediation Program, August 15, 1989
- 58. Addendum to Quality Assurance Project Plan for the French Limited Site In Situ Biodegradation Demonstration Phase III, February 16, 1990
- 59. Potable Water Well Installation Report French Limited Site, December 7, 1988
- 60. Bioresidue Fixation Alternatives Evaluation Report French Limited Site March 20, 1989
- 61. Ambient Air Impact Risk Assessment Report, May 5, 1989
- 62. Shallow Aquifer and Subsoil Remediation Facilities Design Report Volume I of III Summary Report and Appendices A-H, July 1991
- 63. Shallow Aquifer and Subsoil Remediation Facilities Design Report Volume II of III Appendices I-M, June 1991
- 64. Shallow Aquifer and Subsoil Remediation Facilities Design Report Volume III of III
 Appendices N-P, June 1991

- 65. French Ltd. Remediation Design Report Executive Summary Bioremediation Shallow Aquifer July 1991
- 66. BioGEE International, Inc., Project Report Biotreatability Study Using Isolated Indigenous Organisms, April 15, 1994
- 67. Black EPA Binder
- 68. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 1, Report, Appendices A-E
- 69. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 2, Appendix F
- 70. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 3
 Appendix F continued
- 71. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 4, Appendix G
- 72. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 5, Appendix H
- 73. CH2M Hill, Cell E Verification Remediation Report, May 1993, Volume 6, Appendix H continued
- 74. Equipment Evaluation Phase IV Report November, 1987 Monthly Report
- 75. Equipment Evaluation Phase IV Report December, 1987 Monthly Report
- 76. Microfiche Field Reports 1988 -small box
- 77. Annual Groundwater Monitoring Report, December 1993, Report and Appendices A-B
- 78. Annual Groundwater Monitoring Report, December 1993, Appendices C-H
- 79. DNAPL Study Remedial Alternative Selection and Feasibility Study Report, November 1994
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- 81. French Limited Wetlands Mitigation, Final Site Restoration Plan

- 82. French Limited Wetlands Mitigation, Site Selection Report
- 83. French Limited Wetlands Mitigation, 404 and 401 Permit Application, U.S. Army Corps of Engineers, Galveston, TX
- 84. Quality Assurance Report, February 15, 1993, Report No. QA93003
- 85. Quality Assurance Report, January 20, 1994, Report No. QA94001
- 86. Environmental Protection Agency, Region VI, Hazardous Waste Management Division, First Five Year Review (Type Ia), CERCLIS TXD-980514814, December 1944
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- 89. Monthly Progress Report, January, 1992
- 90. Monthly Progress Report, January, 1992, Appendices A-C
- 91. Monthly Progress Report, January, 1992, Appendices E-F
- 92. Monthly Progress Report, January, 1992, Appendix G
- 93. Monthly Progress Report, February, 1992
- 94. Monthly Progress Report, February, 1992, Appendices A-B
- 95. Monthly Progress Report, February, 1992, Appendices C 1
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- 97. Monthly Progress Report, February, 1992, Appendices D-E
- 98. Monthly Progress Report, March, 1992
- 99. Monthly Progress Report, March, 1992, Appendix A
- 100. Monthly Progress Report, April, 1992
- 101. Monthly Progress Report, April, 1992, Appendices A-B

- 102. Monthly Progress Report, May, 1992
- 103. Monthly Progress Report, May, 1992, Appendices A-B
- 104. Monthly Progress Report, June, 1992
- 105. Monthly Progress Report, June, 1992, Appendices A-B
- 106. Monthly Progress Report, July, 1992
- 107. Monthly Progress Report, July, 1992, Appendices A-B
- 108. Monthly Progress Report, July, 1992, Appendices B1-B22 Vol. 1 of 3
- 109. Monthly Progress Report, July, 1992, Appendices B1-B22 Vol. 2 of 3
- 110. Monthly Progress Report, July, 1992, Appendices B1-B22 Vol. 3 of 3
- 111. Monthly Progress Report, August, 1992
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- 113. Monthly Progress Report, September, 1992
- 114. Monthly Progress Report, September, 1992, Appendices A-B
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- 119. Monthly Progress Report, December, 1992
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- 121. Monthly Progress Report, January, 1993
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- 123. Monthly Progress Report, March, 1993

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124. ľ	Monthly	Progress	Report,	April,	1993
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- 125. Monthly Progress Report, May, 1993
- 126. Monthly Progress Report, June, 1993
- 127. Monthly Progress Report, July, 1993
- 128. Monthly Progress Report, August, 1993
- 129. Monthly Progress Report, September, 1993
- 130. Monthly Progress Report, October, 1993
- 131. Monthly Progress Report, November, 1993
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- 136. Monthly Progress Report, April, 1994
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- 144. Monthly Progress Report, December, 1994
- 145. Monthly Progress Report, January, 1995

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146. Monthly Progress Report, February, 1995

12 Large Brown Folders:

- Administrative Record Index 2 folders
 Administrative Record 09-26-79 thru 05-29-83
 Administrative Record 06-03-83 thru 11-28-83
 Administrative Record 02-28-84
 Administrative Record 03-09-84
 Technical Comments on Remediation Investigation Report 2-84
 Supplemental Investigation Resource Engr. 1-84
 Administrative Record 3-9-84
- 2. Administrative Record 08-31-84 Administrative Record 10-29-84 thru 01-22-85 French Ltd. Technical and Regulatory Concepts for In-Place Closure, 09-84 Supplementary Investigation, May 1984 French Ltd. Field Activities Work Plan, February 1985 Supplementary Investigation Attachments, May 1985
- Administrative Record 02-04-85
 Remedial Investigation, Vol. I Report, April 1985
 Remedial Investigation, Vol. II Appendices, April 1985
- 4. Administrative Record 04-08-85 thru 11-26-85 Administrative Record 02-14-86 thru 04-04-86 Technical Report for Resource Engineering, 12-03-85 Appendix QA Program for French Ltd., 12-18-85 1985 Field Investigation Report Appendices, January, 1986 1985 Field Investigation Report , January, 1986
- Administrative Record 04-01-86
 Remedial Investigation Report Appendices, Vol. II, April, 1986
- 6. Administrative Record 4-1-86
- 7. Administrative Record 05-08-86 thru 05-12-86
 Administrative Record 06-01-86
 Administrative Record 01-05-87
 Remedial Investigation Report, June 1986
 Laboratory Evaluation of Biodegradation, 12-86
 1986 Field Investigation Hydrology Report, 12-86
 Endangerment Assessment Report, 2-87

- 8. Feasibility Study, March 1987
- 9. Administrative Report 03-11-87 thru 03-25-87
 Administrative Report 4-1-87
 Administrative Report 4-7-87
 In Situ Biodegradation Demonstration Phase III QA Project Plan 3-87
 Endangerment Assessment Report, 4-87
 Proposed In Situ Biodegradation Demonstration French Limited Site Phase III 4-87
- 10. Administrative Report 4-15-87 thru 5-I-87 Administrative Report 5-21-87 thru 7-2-87 French Limited Focused Feasibility Study, ERT 5-87 Revised Field Evaluation of Biodegradation at French Site Phase II Vol. I -Revised 7-10-87
- 11. Administrative Report 7-20-87 11-23-87
 Administrative Report Undated Documents 000122-000134
 In Situ Biodegradation Demonstration Report Vol. I Executive Summary 10-87
 French Limited Site Work Plan Vol. I Project Activities and Sample Plan
- 12. Texas Air Control Board Regulations I thru IX
 Standard Exemption List
 Application for Permit

During the month of March, the status of both libraries have been reviewed and the above information found to be accurate.

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9.0 WETLANDS RESTORATION

9.1 Summary of Activities and Progress

Conducted safety meetings at the start of each work shift; inspected all equipment for safety compliance each shift; used daily lottery ticket safety awareness program.

Updated site work plan based on field progress.

Some dewatering was required after each significant rainfall; frequent heavy rains delayed the excavation work on site.

Continued excavation of flow channels; about 85% complete at end of month.

Completed final grading and applied topsoil in about 25% of the area.

Excavated five shallow fresh water ponds on the islands; started tree planting around the ponds.

Bridge construction is 30% complete.

Maintained site security to protect the public and project equipment.

Completed the site re-vegetation plan and secured the necessary tree species.

Conducted five site tours for interested parties.

Reviewed the project status, progress, and issues with the agency review committee; the agencies are satisfied with site progress.

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9.2 Problem Areas and Solutions

Problem

Solution

Trees in excavation area.

Transplant desirable trees to temporary nursery area; treat large trees with nutrients.

Water inflow to site.

Seal culverts; secure sewer lines and stormwater lines; regular pumping.

Safety awareness

Daily safety meeting; lottery ticket program; frequent equipment inspections.

Excavation in wet, soft areas.

Revise work schedule to allow drainage; pump water on "off" days.

9.3 Problems Resolved

None.

9.4 Deliverables Submitted

February, 1995, Monthly Report.

9.5 Upcoming Events and Activities

Daily safety program.

Continue civil work on site.

Replace topsoil and vegetate.

Contour site.

MONTHLY PROGRESS REPORT Wetlands Restoration

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Develop detailed cost estimate for Brownwood.

Start re-vegetation.

Develop forecast of maintenance requirements.

Develop community relations plan.